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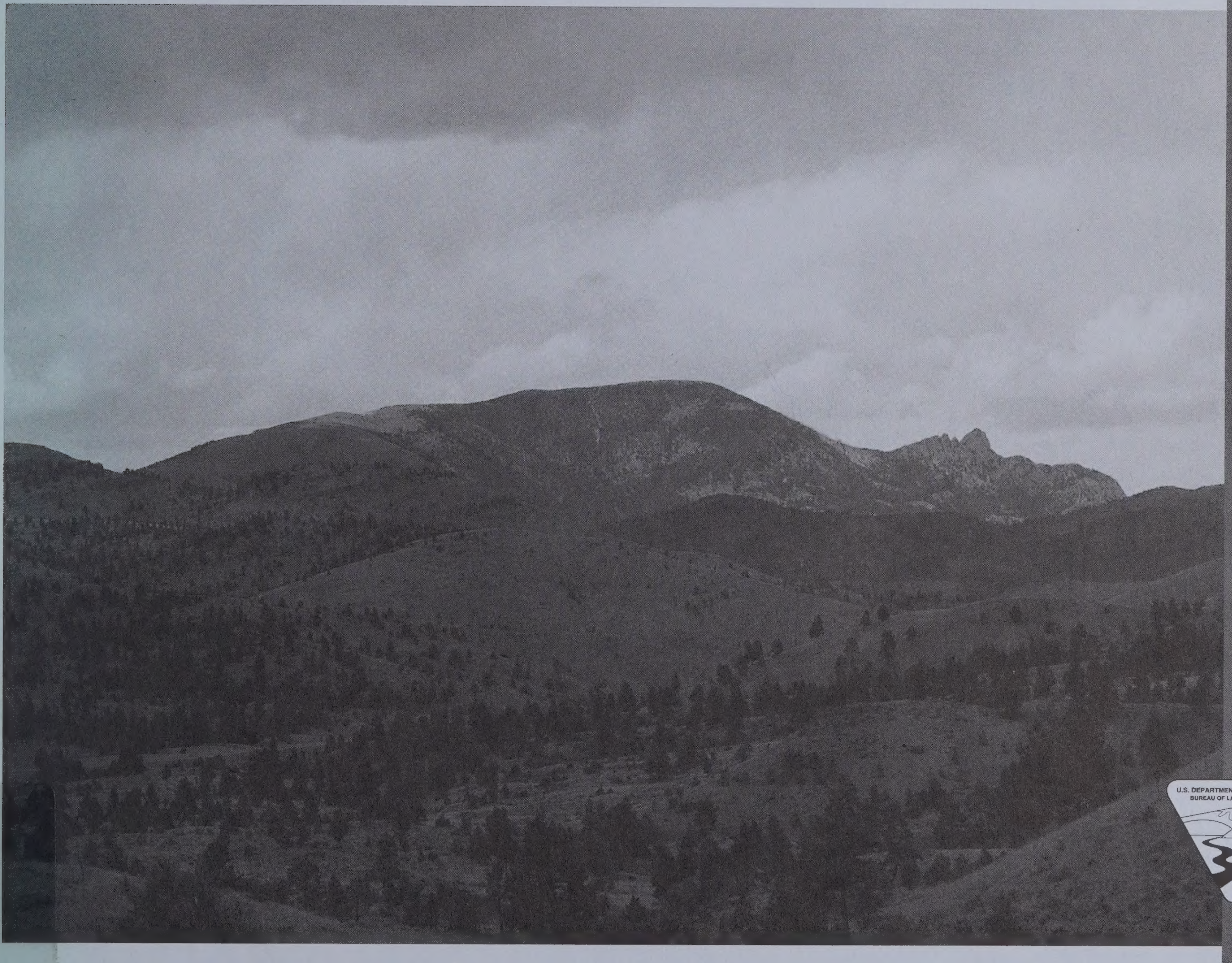
Butte Resource Management Plan and Final Environmental Impact Statement

VOLUME III

September 2008



BLM

Butte Field Office

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

The Bureau of Land Management is responsible for the stewardship of our public lands. It is committed to manage, protect, and improve these lands in a manner to serve the needs of the American people for all times. Management is based on the principles of multiple use and sustained yield of our nation's resources within a framework of environmental responsibility and scientific technology. These resources include recreation; rangelands; timber; minerals; watershed; fish and wildlife; wilderness; air; and scenic, scientific, and cultural values.

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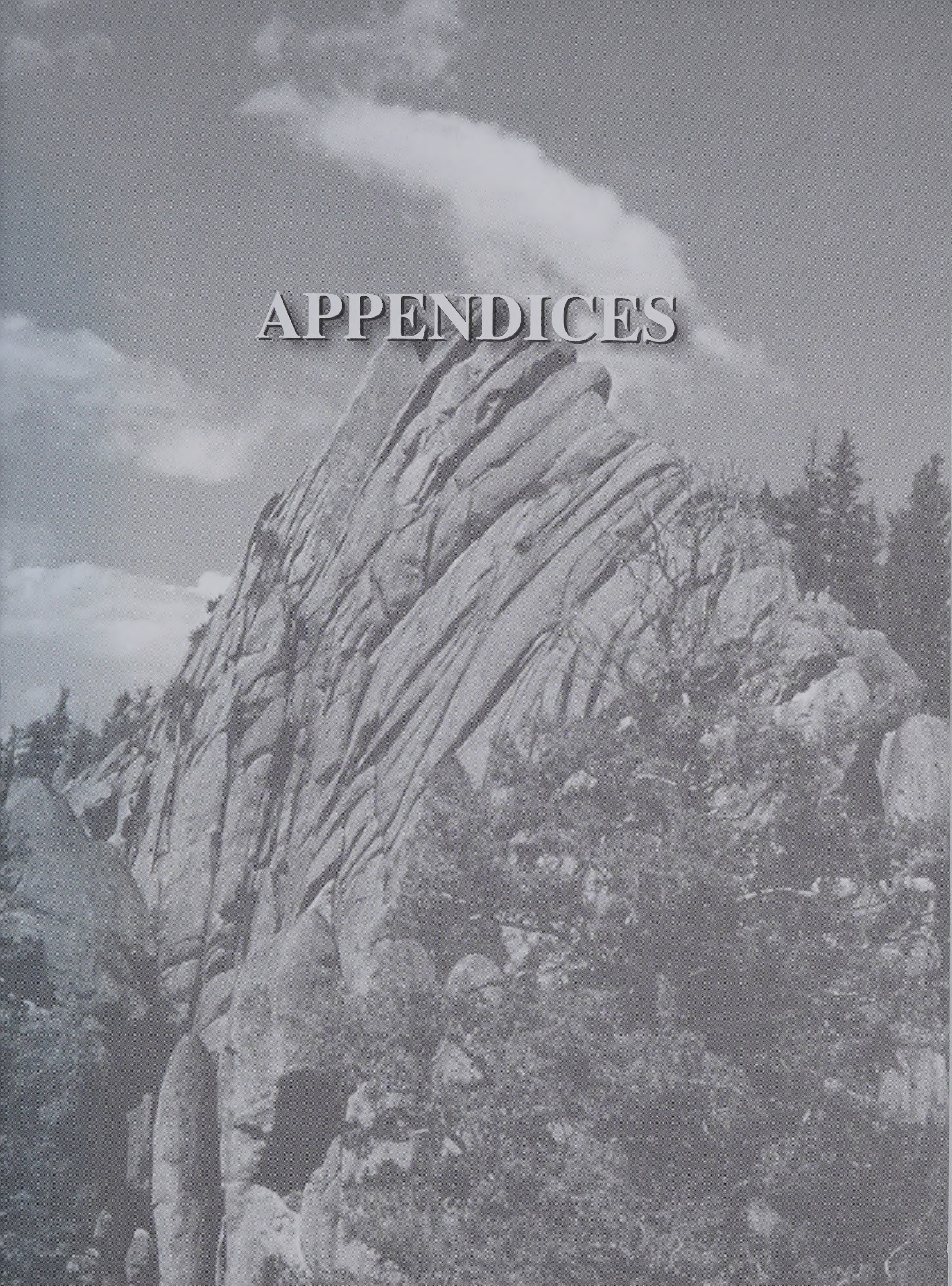

APPENDIX A – TRAVEL MANAGEMENT

TRAVEL MANAGEMENT PLANNING AND ROUTE EVALUATION PROCESS USED BY BLM INTERDISCIPLINARY TEAM

In developing site-specific travel plans to meet its multiple-use mission, the BLM is required to follow regulations found at 43 CFR 8342. In part, these regulations (43 CFR 8342.1) require the BLM to locate routes to minimize damage to soil, watershed, vegetation, air, or other resources; minimize harassment of wildlife or significant disruption of wildlife habitats, with special attention being given to protect endangered or threatened species and their habitats; and minimize conflicts between off-road vehicle use and other existing or proposed recreational uses of the same or neighboring public lands.

To develop travel plan alternatives that follow these regulations, the Butte Field Office Interdisciplinary Team developed an organized, systematic process to conduct route by route analysis for each travel planning area. Utilizing this process, each route was evaluated to recommend its future management status as either Open, Open/With Restrictions, Closed, or Decommissioned.

Evaluations were conducted by analyzing three identified key Resource categories (Wildlife/Habitat, Aquatics/Fisheries, and Soils), and then comparing the *level of impacts* to those resources to the *level of importance* for Human Use. Six key Human Uses categories were identified. They are: Public Use (recreation, hunting, woodcutting, etc.), Wildland/Prescribed Fire, Forest Management, Mineral/Energy Development, Private Property Access, and Range Management. Due to its importance, Public Use was rated as an individual category, while Wildland/Prescribed Fire, Forest Management, Mineral/Energy Development, Private Property Access, and Range Management were rated together.

Although the process provided separate analysis for Resource impacts, and combined some of the Human Use analysis, each was considered equally important and “weighted” the same during comparative analysis.

In addition to its route by route analysis, the Interdisciplinary Team reviewed and consulted the public scoping comments (issues/concerns, potential solutions) generated during a series of public travel planning meetings. The public comments provided useful information for site-specific route evaluation as well as help set overall context for each travel planning area.

In order to provide a repeatable, systematic approach, Interdisciplinary Team members developed written criteria, with a range of numerical values (e.g., 0, 3, 6, 9), for use with each Resource and Human Use Worksheet. For Resource impact analysis, a numerical value of 0 indicates “No Impact”, while a numerical value of 9 indicates a “High level of Impact”. For Human Use analysis, a numerical value of 0 indicates “No Importance” to human use, while a numerical value of 9 indicates a “High Level of Importance” to human use.

As each Resource or Human Use specialist completed their route evaluation, the numerical values were entered on Evaluation Worksheets and tabulated, and a final “rating” of Low, Medium, or High was assigned to each route. The Low, Medium, and High ratings were derived by tabulating the maximum numerical value achieved during the analysis, and then dividing the total into thirds to arrive at the Low Medium, and High rating.

For example, seven written Wildlife/Habitat Criteria may have provided for a *possible* maximum numerical value of 52 for any given road segment within a particular travel planning area. However, assume the highest numerical value actually achieved for any road within that specific travel planning area was actually 36. To determine the rating for Low, Medium, or High, divide 36 into thirds (divide by 3). The results are as follows:

- Low = 0-12
- Medium = 13-24
- High = 25-36

Continuing with this example, assume that for a particular route, the following numerical values have been determined and entered on the worksheet:

- Big Game Habitat = 6
- Unique Habitats = 0
- Fragmentation of Habitat = 6
- Connectivity = 0
- Noxious Weeds = 4
- Relict Plant Communities = 0
- Special Status Plant Species and Habitats = 3

In this case, the numerical total for this route is 17, and will receive a rating of “Medium”.

This is the same methodology that was used to complete the Aquatics/Fisheries, Soils, and Human Use route evaluations and ratings throughout the process on a “per travel planning area” basis.

After the Resource and Human Use analysis was completed for a travel planning area, the final ratings (Low, Medium, or High) for each route were entered onto the *Final Evaluation Table*. The Final Evaluation

Table provides a format to compare the Resource Impact and Human Use ratings determined for each route for the particular travel planning area. Interdisciplinary Team recommendations on route-specific management stemmed from a comparison of the Resource Impact and Human Use ratings. Recommendations included a range of options including open yearlong, open with seasonal restrictions (seasons based on site-specific needs), closed yearlong, or decommissioning. Reasons for seasonal restrictions included (but were not limited to) such rationale as minimizing winter disturbance of big game in winter range areas, providing for or preventing motorized access during big game hunting seasons, or minimizing soil erosion during wet or snowmelt periods. The Final Evaluation Table includes a space for written comments to clarify the Interdisciplinary Team's proposed management recommendations.

As an example, assume the following final ratings for a particular route:

- Wildlife/Habitat Impact Rating – Low
- Aquatics/Fisheries Impact Rating – Low
- Soils Impact Rating – Medium
- Human Use Rating – High

For this example, the overall level of Resource impacts is Low, while the overall level of importance to Human Use is High. In this case, the Interdisciplinary Team would likely propose to manage the route as Open, or perhaps Open/Restricted (seasonal restrictions) if Soil erosion were an issue. For a different route, the overall level of Resource Impacts might be High, while the overall importance to Human Use might be low; resulting in an Interdisciplinary Team proposal for Closure. In the above examples, there are no conflicts between the Resource Impact and Human Use ratings.

However, a wide range of variations for Resource/Human Use ratings is possible, and in some cases required discussion and negotiation by the Interdisciplinary Team to arrive at a proposed management decision. For example, there were a number of routes where Resource Impacts and Human Use needs both rated out as High. These situations required group discussion and negotiation in order to arrive at a proposed management solution.

Note: Near the end of BLM's "route by route" review process, a number of additional routes were identified in the Boulder-Jefferson and Lewis and Clark County NW TPAs through the use of aerial photography, orthoquads, and other GIS technology. The vast majority of these routes are very short, less than 1/10th mile in length. Due to time constraints, the ID team decided to forgo complete analysis of these routes (using the process described above. Proposed management decisions for these additional routes were based on professional knowledge, and ID team analysis and recommendations made for adjacent routes.

Rating Criteria Used for Route by Route Evaluation

The following written criteria were used throughout the five travel plan areas for route by route evaluation and proposed management decision (Open, Open/With Restrictions, Closed, or Decommissioned). For some travel planning areas (Upper Big Hole, Lewis and Clark County NW), additional Wildlife criteria were needed to evaluate Unique Habitats, Sensitive Species (Sage Grouse, Northern Goshawk), and Threatened and Endangered Species (lynx, grizzly).

Resource Impact Evaluation Criteria

Wildlife

1. **Big Game Habitat**

   0 = Segment does not lie within or intersect elk/deer winter range.

   8 = Segment lies within or intersects elk/deer winter range.

2. **Fragmentation of Habitat**

   This factor addresses the role of each road segment in the context of fragmenting large blocks of habitat (1 square mile). The factor looks at the spatial location and density of roads. Use moving windows roads analysis to determine road densities in analysis area.

   2 = Segment is in an area of relatively unfragmented habitat.

   12 = Segment is within road density of 0.5-1.5 mi/sq mi.

   9 = Segment is within road density of 1.6-2 mi/sq mi.

   6 = Segment is within road density of >2 mi/sq/mi.

   3 = Segment is within road density of >3 mi/sq/mi

3. **Connectivity**

   This factor primarily addresses the fragmentation and loss of habitat within connectivity corridors or riparian areas. (Based on American Wildlands corridor analysis).

   0 = Segment is not within a connectivity corridor or riparian reserve.

   3 = Segment intersects a low quality connectivity corridor.

   6 = Segment intersects a moderate quality connectivity corridor or riparian reserve.

   9 = Segment intersects a high quality connectivity corridor or riparian reserve.

4. **Noxious Weeds**

0 = Segment has no known infestations of noxious or non-native invasive weeds

4 = Density: Trace-5%; And Extent: Patchy = less than 0.1acre

8 = Density: 5-25%; Or Extent: Infestations 0.1-5 acres

12 = Density: 25-100%; Or Extent: 5+ acres and soils susceptible to invasion.

5. **Relict Plant Communities**

0 = Segment does not cross any relict plant communities

4 = Segment crosses a relatively intact relict plant community

6. **Special Status Plant Species and Habitats**

0 = Segment does not cross any known special status plant species communities or potential habitat

3 = Segment crosses potential special status plant species habitat

6 = Segment crosses known special plant status species communities or habitat.

Aquatics/Fisheries Evaluation Criteria

1. **Stream Crossings on non fish-bearing streams**

This factor addresses the extent to which the road segment lies within riparian areas, disconnect streams from their floodplains, and prevent development of riparian vegetation.

0 = Segment is ridge top or mid-slope with no stream crossings

2 = Segment is mid-slope with few (1-2) stream crossings

4 = Segment is mid-slope with numerous (>3) stream crossings

2. **Riparian Vegetation**

0 = Segment is outside of riparian vegetation

2= Segment slightly impacts riparian vegetation

4 = Segment moderately impacts riparian vegetation

6 = Segment highly impacts riparian vegetation. Segment is within a riparian area and/or parallel to a creek

3. **Proximity to Fish Populations**

This factor addresses how direct any road effects would be to fish stocks. Features used to judge the "likelihood" of effects to fish stocks included stream crossings over fish-bearing streams, stream crossings over non fish-bearing streams that were in close proximity to fish-bearing streams, and effects to riparian vegetation along fish-bearing streams.

0 = Segment is not near fish-bearing waters.

3 = Segment has 1-2 stream crossings over a fish-bearing stream.

6 = Segment has 2-3 stream crossings over a fish-bearing stream.

9 = Segment is directly adjacent to a fish-bearing stream, parallel to the creek or has 4 or greater stream crossings.

Soil Evaluation Criteria

1. **Accelerated Erosion**

Soils that are resistant to erosion:

0 = Low impact. The area the route travels through has slopes ranging from 0-15%.

6 = Medium impact. The area the route travels through has slopes ranging from 15-30%.

9 = High impact. The area the route travels through has slopes greater than 30%.

Soils with granite parent material

6 = Medium impact. The area the route travels through has slopes ranging from 0-30%.

9 = High impact. The area the route travels through has slopes greater than 30%.

Soil Impact Rating (minimum = 0, maximum = 9)

Low Impact = 0-3

Moderate Impact = 4-6

High Impact = 6-9

Resource Use Evaluation Criteria

Private Property access, Public Utility (Right of Way) access, and private property easements granted to BLM

1. **Need for Access to private property, public utility right of ways, and private property easements providing access to BLM lands.**

0 = Route does not contribute in any way to access private property, public utility right-of-way, or private property easement providing access to BLM lands.

3 = Route serves as secondary access to private land, public utility right of way, or private property easement providing access to BLM lands.

6 = Route serves as primary access to private property, public utility right of way, or private property easement providing access to BLM lands.

Forest Management Evaluation Criteria

1. **Access for Timber Production and silviculture.**

0 = Route does not access or is not needed to access potential forest management or treatment project units, such as areas with no forest or woodland or stands located in regulated management locations like wilderness study areas, nor does the route provide access for personal use of forest materials by the public.

3 = Route is not anticipated to be needed for BLM planned forest management activities or treatment within 20 years, or provides access to isolated stands of forest with no current public access.

6 = Route provides access to public forest or woodland available for public use such as firewood gathering or Christmas tree, or is expected to be needed for vehicle access to forest management or treatment units within 20 years, or currently provides access for inventory or monitoring activities.

9 = Route provides vehicle access to an existing BLM contract area or current or currently planned forest management activities such as forest product sales, pre-commercial thinning, forest residue treatment, site preparation, plantings, insect/disease suppression or fire restoration, or provides access for project follow-up or trespass investigation activities.

Mineral/Energy Development Evaluation Criteria

1. **Need for Access for Mineral/Energy development**

0 = Route does not access, or will not be needed to access mineral/energy development.

3 = Route would not be needed to access mineral/energy development within 20 years.

6 = Route is expected to be needed to access mineral/energy development within 20 years.

9 = Route is currently used to accesses mineral/energy development.

Range Management Evaluation Criteria

1. **Need for Permittee Access (for range management, and/or maintenance repairs to range facilities)**

0 = Route does not access range improvements, is not used for range management.

6 = Route provides access to range improvements, and/or is needed for range management.

Wildland/Prescribed Fire Evaluation Criteria

1. **Need for Access for fire suppression, fuels management**

0 = Low intensity area

6 = Moderate intensity area.

9 = High intensity area.

Public Use Access Evaluation Criteria (Recreation, Hunting, Woodcutting, etc.)

1. **Need/Level of Public Use**

0 = No known public use

3 = Receives little public use, does not access any developed recreation sites (facilities, trailheads) known points of interest, or destination points.

6 = Receives moderate use, used to access hunting areas, developed recreation sites (facilities, trailheads), known points of interest, or destination points.

9 = Receives high use, provides primary access to hunting areas, developed recreation sites (facilities, trailheads), known points of interest, or destination points.

COMMUNITY BASED COLLABORATIVE WORKING GROUPS

During spring 2004, BLM identified and prioritized nine site specific areas needing travel planning. Five of the nine areas were identified as High Priority, and are being addressed concurrently with the RMP revision. The remaining four areas were identified as Moderate Priority, and will need to be addressed after the RMP, due to time constraints.

1) Helena (focus area- Scratchgravel Hills) - *High Priority*

2) East Helena (focus area- North Hills) - *High Priority*

3) Lewis and Clark Country Northwest (focus area- Marysville) - *High Priority*

4) Boulder/Jefferson City - *High Priority*

5) Upper Big Hole River - *High Priority*

6) Missouri River Foothills - *Moderate Priority*

7) Jefferson County Southeast - *Moderate Priority*

8) Broadwater County South - *Moderate Priority*

9) Park/Gallatin - *Moderate Priority*

Given their relative importance, a series of public scoping meetings were held for the five *High Priority* travel planning area during November and December 2004, and January 2005. The primary purpose of the meetings was to solicit site-specific issues and concerns, as well as potential solutions; to be used to help establish criteria governing decisions for travel planning. (e.g., issue/concern – noise/dust impacts from motorized OHV use near housing area; solution – restrict/prohibit OHV use near housing area, establish minimum distance, criteria – establish/determine minimum distance from housing areas).

During the meetings, it became apparent that three of the travel planning areas - Lewis and Clark County Northwest (Marysville), Helena (Scratchgravel Hills), and East Helena (North Hills) were particularly important to the public and travel planning. Meetings for these three areas were well attended; interest in the Scratchgravel Hills required a second meeting.

Given the level of public interest, BLM decided to solicit the assistance of three community-based collaborative working groups, one for each travel planning area. Assisted in part by Tetra Tech (RMP contractor), the groups were intended to work under the direct supervision and guidance of the Western Montana Resource Advisory Council (RAC).

Several press releases and letters of interest were issued by Tetra Tech during May 2005, soliciting applicants for each of the three travel planning areas. The mission of the collaborative working groups was to "assist in developing a travel management plan mutually agreeable to both the collaborative working groups and BLM". Membership criteria included: Montana residency, familiarity with the travel planning area(s), and a willingness to work collaboratively with people of differing viewpoints. In addition, in accordance with the Western Montana Resource Advisory Council criteria, members were selected from three different interest categories in order to provide for balanced representation.

BLM anticipated enough public interest to support three balanced working groups, composed of either six or nine people total. Without BLM intervention, Tetra Tech was tasked with selecting group membership (for subsequent approval by the RAC), and coordinating and facilitating all of the group meetings. No BLM employees participated in the working groups.

In late May, however, it became apparent that the RAC would not be able to sponsor the collaborative subgroups, due to time constraints and other unforeseen events. BLM contacted the Lewis and Clark County commissioners, who graciously agreed to sponsor the collaborative working groups under their direct guidance and supervision.

Due to a shortage of interested candidates, only two (rather than 3) balanced collaborative working groups were able to be selected, each composed of nine members. Given its group membership, interest, and local knowledge, one of the groups was tasked with assisting the BLM develop travel management for both the Helena (Scratchgravel Hills) travel planning area as well as the East Helena (North Hills) travel planning area, while the second group was selected to assist the BLM with the Lewis and Clark travel planning area (Marysville).

The Lewis and Clark County Commission sponsored and oversaw the working group process. Michael McHugh, the Lewis and Clark County land planner, represented the county and chaired both working groups throughout the process. Each group held a series of six meetings during June and July, 2005. Each meeting was assisted by Tetra Tech, and attended by BLM staff only to answer questions and provide information from the BLM's Interdisciplinary Team as needed. In addition, BLM provided a full range of maps and other travel planning information used by its own interdisciplinary travel planning team, including its preliminary travel planning recommendations based on the route by route rating process described above (if requested by working groups), for each of the three travel areas. However, since no BLM employees participated on the working groups and the BLM did not facilitate the process, the Federal Advisory Committee Act (FACA) did not apply to the working groups.

Working group recommendations were based on consensus. In the end, the working groups were able to arrive at complete consensus for the Marysville and North Hills areas, but only partial consensus for the Scratchgravel Hills area.

From August 2005-October 2005, the BLM Interdisciplinary team met and finalized a range of alternatives (A-D) for each of the five travel planning areas addressed with the RMP revision. With the exception of some minor changes, community based collaborative working group proposals were incorporated into Alternative B, which eventually became the Preferred Alternative.

BUTTE FIELD OFFICE TRAVEL PLAN VARIANCE PROCESS/APPLICATION FORM

Travel plan variances are requests by the public, commercial interests, interagency personnel, or BLM personnel to temporarily use motorized vehicles on closed roads, seasonally restricted roads, and cross country (off road) use. The following process (see flowchart below) has been developed to address requests for motorized travel not already authorized by a prior decision based on analysis in an existing EIS, EA, or the provisions of a permit, lease, memorandum of understanding, or right of way. It is also intended to provide additional oversight for uses already generally authorized under the 2003 Statewide OHV ROD and Instruction Memorandum #MT-2001-004 regarding administrative uses.

Variance requests that cannot be approved due to issues raised during review would be subject to the NEPA process, or Documentation of NEPA adequacy (DNA). A DNA is documentation of whether or not there is existing NEPA documentation to cover the proposal. If the variance request cannot pass this "test", additional NEPA documentation is required.

The process is initiated by the program lead requesting the variance, or who has received a request from the public. After completing the basic information on the variance form, the flow chart should be circulated among the respective specialists for consultation and overall review.

Example requests for variances include (but are not limited to):

- Access to private property (patented mine claim, mining claim location and assessment work, seasonal cabin)
- Casual use mineral exploration (refer to 43 CFR 3809.5)
- Permit lease administration (firewood collection, recreation)
- Agency administrative work
- Contract work or contract administration
- Other permit leases

Flowchart

(Please document your responses, as needed, in the space next to the question. Use "N/A" for issues and concerns not applicable to the request).

Does the request provide reasonable use of public lands? — **No-----No Variance**
Must be Yes to continue
|
Yes
|
Are there reasonable, alternative routes available? — **Yes-----No Variance**
Must be No to continue
|
No
|
Is the activity in a WSA?
(Exceptions – Grandfathered rights, valid existing rights, use of an existing way) — **Yes-----No Variance**
Must be No to continue
|
No
|
Is the road safe to use during the requested time period? — **No-----No Variance**
Must be Yes to continue
|
Yes
|
Can the activity be postponed until the road or area is open to motorized use? — **Yes -----No Variance**
Must be No to continue
|
No
|
Can resource impacts be sufficiently mitigated?
(Winter range, spring calving habitat, Threatened and Endangered species habitat, sensitive species habitat, sensitive soils, soils susceptible to erosion, water quality, spread of noxious weeds, etc.) — **No-----No Variance**
Must be Yes to continue
|
Yes
|
Can social conflicts (as analyzed) be sufficiently mitigated? — **No ----- No Variance**
Must be Yes to continue
|
Yes

Yes – Variance may be approved by Authorized Officer (refer to Variance Request Form for signature)

Respective Program Reviewers:

Program Lead	Signature	Date
CULTURAL		
FORESTRY		
REALTY		
WILDLIFE/T&E		
GEOLOGY		
SOIL/WATER/AIR		
HAZMAT/AML		
RANGE/WEEDS		
RECREATION/WILDERNESS/VRM		
RIPARIAN		
FIRE/FUELS		
TRAVEL MANAGEMENT		

USDI BUREAU OF LAND MANAGEMENT
Butte Field Office
106 North Parkmont
Butte, Montana, 59701
Telephone 406-533-7600

Authorization No.____________

AUTHORIZATION FOR MOTORIZED USE OF ROAD, TRAIL, OR AREA WITH TRAVEL RESTRICTIONS

When approved by the authorized officer, this permit authorizes:

Name: ____

Address: ____
(City, State) (Zip)

Telephone Number (s): _______________________________

(List additional authorized users on back of form)

To use the following road (s), trails, or area with travel restrictions (indicate entry locations and travel areas):

____

____

____

In order to conduct the following operations:

____

____

____

____

____

Dates/Time of Use:

____

____

Number and Type(s) of Vehicles:

____

____

(See other side)

Page 1 of 3

Standard Stipulations

Copy of variance to be kept with authorized vehicle (s) and displayed in window.

Variance restricted to authorized (listed) individuals only

Permittee shall notify BLM of any changes under this authorization

Post sign or notice (on gate or beginning of restricted road) stating reason for use. Close/Lock gates when entering and leaving closure area

Vehicle use limited to ingress and egress only, using the authorized route, and minimum number of vehicles and trips.

No off road travel allowed, unless specifically authorized under this variance.

Avoid wet areas; travel only when ground is dry to prevent ruts and resulting erosion

Wash vehicles prior to use on BLM lands to prevent introduction of weeds

During fire operations - May use ATVs and engines on any existing road or trail that accesses treatment area. Off road use restricted for fire holding, mop up, and any related suppression needs. Off road vehicle use should be avoided during the general rifle hunting season. No new trails are to be created

During hunting season - Vehicles shall not be used for hunting purposes on BLM lands. Use limited to ingress/egress only after dark or between the hours of 11 AM to 3 PM (with the exception of emergencies).

I (we) acknowledge that I (we) am (are) required to comply with any conditions or stipulations of the authorized officer when the permit is issued:

____

(Applicant signature/date)

Butte Field Office Manager Action

Special Stipulations (if any):

______ Variance Approved

This application is hereby approved subject to the Standard stipulations and Special stipulations (if any) listed above:

____

(Signature/date)

______ Variance Denied

This application has been denied for the following reasons:

See attached letter.

This decision may be appealed to the Interior Board of Land Appeals, Office of the Secretary, in accordance with the regulations contained in 43 CFR, Part 4, and the enclosed Form 1842-1. If an appeal is taken, your notice of appeal must be filed in this office (at the above address) within 30 days from receipt of this decision. The appellant has the burden of showing that the decision appealed from is in error.

If you wish to file a petition (request) pursuant to regulation 43 CFR 8342 for a stay (suspension) of the effectiveness of this decision during the time that your appeal is being reviewed by the Board, the petition for a stay must accompany your notice of appeal. A petition for a stay is required to show sufficient justification based on the standards listed below. Copies of the notice of appeal and petition for a stay must also be submitted to each party named in this decision and to the Interior Board of Land Appeals and to the appropriate Office of the Solicitor (see 43 CFR 4.413) at the same time the original documents are filed with this office. If you request a stay, you have the burden of proof to demonstrate that a stay should be granted.

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APPENDIX B – LAWS AND EXECUTIVE ORDERS AFFECTING BLM PLANNING AND MANAGEMENT

MANAGEMENT OF LAND & RESOURCES APPROPRIATION LANGUAGE CITATIONS

16 U.S.C. 594,
43 U.S.C. 17015,
30 U.S.C. 181 *et seq.*,
30 U.S.C. 351-359;
43 U.S.C. 2, 31(a), 52, 315;
43 U.S.C. 1701 *et seq.*, and 1901 *et seq.*,
78 *Stat.* 986;
P.L. 103-332;
P.L. 104-208;
P.L. 105-83;
P.L. 105-277;
P.L. 106-113; and P.L. 106-291

16 U.S.C. 594, Protection Act of September 20, 1922 provides for the Secretary of the Interior to protect and preserve, from fire, disease, or the ravages of beetles or other insects, timber on the public lands owned by the United States.

30 U.S.C. 181 et seq., the Mineral Leasing Act of 1920 as amended, provides for the leasing of deposits of coal, phosphate, sodium, potassium, oil, oil shale, native asphalt, solid and semi-solid bitumen, and bituminous rock or gas, and lands containing such deposits owned by the United States, including those in national forest, but excluding those acquired under other acts subsequent to February 25, 1920, and those within the national petroleum and oil shale reserves. The Act also preserves the right of pre-1920 oil shale mining claims to be patented.

30 U.S.C. 351-359, the Mineral Leasing Act for Acquired Lands, provides for the leasing of coal, phosphate, oil, oil shale, gas, sodium, potassium, and sulfur which are owned or acquired by the United States and which are within the lands acquired by the United States, with the consent of the head of the agency having jurisdiction over the lands containing such deposits.

43 U.S.C. 2, provides that the Secretary of the Interior, or such officer as he may designate, shall perform all executive duties appertaining to the surveying and sale of the public lands of the United States, or in anyway respecting such public lands, and, also, such as relate to private claims of land and the issuing of patents for all grants to land under the authority of the Government.

43 U.S.C. 31(a) provides for the classification of the public lands and examination of the geological structure, mineral resources, and products of the national domain.

43 U.S.C. 52, provides that the Secretary of the Interior, or such officer as he may designate, shall cause to be surveyed, measured, and marked, without delay, all base and meridian lines through such points and perpetuated by such monuments, and such other correction parallels and meridians as may be prescribed; that all private land claims shall be surveyed after they have been confirmed by authority of Congress, so far as may be necessary to complete the survey of the public lands; and that he shall transmit general and particular plans of all lands surveyed by him to such officers as he may designate.

43 U.S.C. 315, The Taylor Grazing Act of 1934, as amended, provides that the Secretary of the Interior is authorized to establish grazing districts from any part of the public domain of the United States (exclusive of Alaska) which, in his opinion, are chiefly valuable for grazing and raising forage crops, to regulate and administer grazing use of the public lands, and to improve the public rangelands.

43 U.S.C. 1701 et seq., the Federal Land Policy and Management Act of 1976, as amended, provides for the public lands to be generally retained in Federal ownership; for periodic and systematic inventory of the public lands and their resources; for a review of existing withdrawals and classifications; for establishing comprehensive rules and regulations for administering public lands statutes; for multiple-use management on a sustained yield basis; for protection of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archaeological values; for receiving fair market value for the use of the public lands and their resource; for establishing uniform procedures for any disposal, acquisition, or exchange; for protecting areas of critical environmental concern; for recognizing the Nation's need for domestic sources of mineral, food, timber, and fiber from the public lands, including implementation of the Mining and Mineral Policy Act of 1970; and for payments to compensate States and local governments for burdens created as a result of the immunity of federal lands from state and local taxation.

43 U.S.C. 1901 et seq., the Public Rangelands Improvement Act of 1978, provides for the improvement of range conditions on public rangelands, research on wild horse and burro population dynamics, and other range management practices.

78 Stat. 986 provides for the classification of certain lands administered exclusively by the Secretary of the

Interior in order to provide for their disposal or interim management under principles of multiple-use and to produce a sustained yield of products and services. Although this authority has expired, the classifications remain in effect.

43 U.S.C. 1715 provides the Secretary of the Interior authorization to acquire, by purchase, exchange, donation, or eminent domain (for access to public lands only), land and interests in lands.

P.L. 106-291, the Department of the Interior and Related Agencies Appropriation Act, 2001, provides expenses necessary for the protection, use, improvement, development, disposal, cadastral surveying, classification, acquisition of easements and other interest in land, and performance of other functions. It also, includes the maintenance of facilities as authorized by law, in the management of lands and their resources under jurisdiction of the Bureau of Land Management, including the general administration of the Bureau, and the assessment of mineral potential of public lands.

AUTHORIZATIONS

The following laws governing the Bureau of Land Management's activities include General Authorizing Legislation, which authorize the general activities of the Bureau of Land Management or govern the manner in which BLM's activities are conducted; and Specific Authorizing Legislation, which governs specific program activities or activities in specific or designated areas.

Act of July 26, 1866, also known as the Lode Act (14 Stat. 251)	Granted rights of way (ROWs) over "public domain" for highways and to ditch and canal owners. Repealed and superseded by FLPMA.
Act of December 22, 1928 (Color of Title) (45 Stat. 1069) as amended (43 U.S.C. 1068, 1068a)	Allowed patents to be issued for claims of long standing, without reservation of minerals to government
Act of May 24, 1928, as amended (49 U.S.C. App. 211-213)	Authorizes the Secretary to lease contiguous unappropriated public lands (not to exceed 2,560 acres) for a public airport.
Alaska National Interest Lands Conservation Act of 1980 (16 U.S.C. 3101 et seq.)	Provides for the special designation of certain public lands in Alaska and conservation of their fish and wildlife values; management for subsistence uses of fish and wildlife resources on public lands by residents of rural Alaska; and protection of the wildlife resources on North Slope lands impacted by oil and gas exploration and development activities.
Americans with Disabilities Act Accessibility Guidelines (ADAAG)	Sets guidelines for accessibility to places of public accommodation and commercial facilities by individuals with disabilities.
American Indian Religious Freedom Act of 1978 (42 U.S.C. 1996)	Declares the United States policy of protecting and preserving the inherent right of freedom to believe, express, and exercise traditional religions; including access to religious sites, use and possession of sacred objects, and freedom to worship through ceremonials and traditional rites; for the American Indian, Eskimo, Aleut, and Native Hawaiian.
Antiquities Act of 1906 (16 U.S.C. 431 et seq.)	Protects cultural resources on Federal lands, and imposes penalties for excavation or appropriation without a permit.
Archaeological Resources Protection Act of 1979, as amended (16 U.S.C. 470a, 470cc and 470ee)	Requires permits for the excavation or removal of Federally administered archaeological resources, encourages increased cooperation among Federal agencies and private individuals, provides stringent criminal and civil penalties for violations, and requires Federal agencies to identify important resources vulnerable to looting and to develop a tracking system for violations.
Architectural Barriers Act (ABA) of 1968 (42 U.S.C. 4151 et seq).	Requires access to facilities designed, built, altered, or leased with Federal funds.
Atomic Energy Act of 1952 (42 U.S.C. 2001f)	Provides for both the development and the regulation of the uses of nuclear materials and facilities in the United States by civilians, and for military use.
Bald Eagle Protection Act of 1940, as amended (16 U.S.C. 668-668d)	Provides for the protection of the bald eagle (the national emblem) and the golden eagle by prohibiting, except under certain specified conditions, the taking, possession and commerce of such birds (including their parts, nests, or eggs).

Bankhead Jones Farm Tenant Act of 1937 (7 U.S.C. 1010 et seq.)	Authorizes management of acquired farm tenant lands, and construction and maintenance of range improvements. It directs the Secretary of Agriculture to develop a program of land conservation and utilization to adjust land use to help control soil erosion, conduct reforestation, preserve natural resources, develop and protect recreational facilities, protect watersheds, and protect public health and safety.
Carey Act of 1894, as amended (43 U.S.C. 641)	Authorizes and empowers the Secretary of the Interior, given Presidential approval and proper application, to donate, grant, and patent desert lands to a state for irrigation, reclamation, and occupation. Lands may be restored to the public domain if reclamation requirements are not satisfied within stated time limits
Carlson-Foley Act of 1968 (42 U.S.C. 1241-1243)	Authorizes BLM to reimburse States for expenditures associated with coordinated control of noxious plants.
Clean Air Act (1970, 1977) (42 U.S.C. 1857)	In its early form (the 1967 Air Quality Act), guided states in controlling sources of air pollution according to a set of principles. As of the 1970, 1977, and 1990 amendments, states apply and administer detailed control requirements prescribed through federal regulations.
Clean Air Act of 1990 as amended (42 U.S.C. 7401, 7418, 7642)	Requires BLM to protect air quality, maintain Federal and State designated air quality standards, and abide by the requirements of the State implementation plans.
Clean Water Act of 1987 as amended (33 U.S.C. 1251)	Establishes objectives to restore and maintain the chemical, physical, and biological integrity of the nation's water.
Comprehensive Environmental Response, Compensation, and Liability Act of 1980 as amended by the Superfund Amendments and Reauthorization Act of 1986 (42 U.S.C. 9601-9673)	Provides for liability, risk assessment, compensation, emergency response, and cleanup (including the cleanup of inactive sites) for hazardous substances. Requires Federal agencies to report sites where hazardous wastes are or have been stored, treated, or disposed, and requires responsible parties, including Federal agencies, to clean-up releases of hazardous substances.
Condemnation Act of 1888, as amended (40 U.S.C. 257)	Authorizes officers of the government to procure real estate for the erection of a public building or for other public uses, through condemnation, under judicial process, whenever it is necessary or advantageous to the Government to do so.
Control of Pollution from Federal Facilities (33 U.S.C. 1323) 1970	Established that federal agencies shall be subject to all requirements and administrative authorities, processes, and sanctions respecting the control and abatement of water pollution in the same manner, and to the same extent as any nongovernmental entity, including the payment of reasonable service charges.
Declaration of Taking Act of 1931 (40 U.S.C. 258(a), (e))	Authorizes the United States to acquire an interest in land immediately upon the filing of a declaration of taking with a court and the deposit in the court of the estimated compensation stated in the declaration.
Department of the Interior and Related Agencies Appropriations Act, 1996 (P.L. 104-134)	Directs the Secretary of the Interior, acting through the Bureau of Land Management, to develop and implement a pilot recreation fee demonstration program to determine the feasibility of cost recovery for operation and maintenance of recreation areas and sites.

Desert Land Act of 1877 (43 U.S.C. 321-323) [2]	Provides authority to reclaim arid and semi-arid public lands of the western States through individual effort and private capital.
Eagle Protection Act of 1962 (P.L. 87-884 (76 Stat. 1346))	Expanded and amended the Bald Eagle Protection Act of 1940 to include golden eagles.
Emergency Planning and Community Right-To-Know Act of 1986 (42 U.S.C. 11001-11050)	Requires the private sector to inventory chemicals and chemical products, to report those in excess of threshold planning quantities, to inventory emergency response equipment, to provide annual reports and support to local and State emergency response organizations, and to maintain a liaison with the local and state emergency response organizations and the public.
Emergency Wetlands Resources Act of 1986 (P.L. 99-645)	Removed a prior prohibition on the purchase of wetlands with Land and Water Conservation Fund monies. Transferred monies to the Migratory Bird Conservation Fund through import duties and entrance fees at National Wildlife Refuges. Provided for planning, mapping, and inventory of wetlands in the United States; and reports to Congress on wetlands loss and the contribution of federal programs to wetlands loss.
Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.)	Directs Federal agencies to ensure that their actions do not jeopardize threatened and endangered species and that through their authority they help bring about the recovery of these species.
Engle Act of February 28, 1958 (43 U.S.C. 156)	Provides that withdrawals for the Department of Defense for more than 5,000 acres shall be made by Congress.
Executive Order, Public Water Reserve No. 107, April 17, 1926	Reserves springs and waterholes on unsurveyed public lands for public use.
Executive Order 11514, Protection and Enhancement of Environmental Quality, March 5, 1970 (35 FR 4247)	Refines implementation of the National Environmental Policy Act of 1969, by directing the federal government to provide leadership in protecting and enhancing the quality of the Nation's environment to sustain and enrich human life, and to initiate measures needed to direct their policies, plans and programs so as to meet national environmental goals.
Executive Order 11593 of May 13, 1971, Protection and Enhancement of the Cultural Environment (36 FR 8921)	Directs Federal agencies to locate, inventory, nominate, and protect Federally owned cultural resources eligible for the National Register of Historic Places, and to ensure that their plans and programs contribute to preservation and enhancement of non- Federally owned resources.
Executive Order 11644, Use of Off-Road Vehicles on Public Lands, February 8, 1972 (37 FR 2877)	Establishes policies and provides for procedures for controlling or directing use of off-road vehicles on public lands, with the goal of protecting resources, promoting the safety of all users, and minimizing conflicts among the various uses.
Executive Order 11987, Exotic Organisms, May 24, 1977 (42 FR 26949)	Directs federal agencies to restrict the introduction of exotic species into natural ecosystems on public lands, to encourage other entities to prevent such introduction, and to restrict federal programs, funds, and authorities from exporting native species for introduction into natural ecosystems outside of the United States.
Executive Order 11988, Floodplain Management, May 24, 1977 (42 FR 26951)	Provides for the restoration and preservation of national and beneficial floodplain values, and enhancement of the natural and beneficial values of wetlands in carrying out programs effecting land use.

Executive Order 11989, Off-road vehicles, May 24, 1977 (42 FR 26959)	Clarifies agency authority to define zones of use for off-road vehicles on public lands.
Executive Order 11990, Protection of Wetlands, May 25, 1977 (42 FR 26961)	Directs that wetland and riparian habitats on the public lands be identified, protected, enhanced, and managed.
Executive Order 12088, Federal Compliance with Pollution Control Standards October 17, 1978 (43 FR 47707)	Sets the requirements for standards applicability, agency coordination, and limits on exemptions from standards.
Executive Order 12548, Grazing fees, February 14, 1986 (51 FR 5985)	Provides for establishment of appropriate fees for the grazing of domestic livestock on public rangelands. Directs that the fee shall not be less than $1.35 per animal unit month.
Executive Order 12898, Environmental Justice, February 11, 1994 (59 FR 7629)	Requires federal agencies to identify and address disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States and its territories and possessions, the District of Columbia, the Commonwealth of Puerto Rico, and the Commonwealth of the Mariana Islands.
Executive Order 12962, Recreational Fisheries, June 7, 1995 (60 FR 30769)	Directs all Federal agencies to enhance recreational fish species and provide increased recreational fishing opportunities.
Executive Order 13007, Providing for American Indian and Alaska Native Religious Freedom and Sacred Land Protections, May 24, 1996 (61 FR 26771)	Directs federal agencies to accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and avoid adversely affecting the physical integrity of such sacred sites.
Executive Order 13084, Consultation and Coordination with Indian Tribal Governments, May 14, 1998 (63 FR 27655)	Provides for consultation with Indian tribal governments in developing regulatory policies that would significantly or uniquely affect Indian tribal communities, increasing flexibility for Indian tribal waivers, and use of consensul mechanisms where appropriate for developing regulations on issues related to tribal self-government, trust resources, or treaty and other rights.
Executive Order 13112, Invasive Species, February 3, 1999 (64 FR 6183)	Directs federal agencies to prevent the introduction of invasive species, provide for their control, and minimize the economic, ecological, and human health impacts that invasive species cause.
Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds, January 10, 2001 (66 FR 3853)	Directs agencies within the Executive Branch to take certain actions to further implement the Migratory Bird Treaty Act (MBTA), with the goal of promoting the conservation of migratory bird populations.
Executive Order 13195, Trails for America in the 21st Century, January 18, 2001 (66 FR 7391)	Directs federal agencies to protect, connect, promote, and assist trails of all types throughout the United States to the extent permitted by law and where practicable, and in cooperation with Tribes, States, local governments, and interested groups.

Executive Order 13352, Facilitation of Cooperative Conservation, August 26, 2004 (69 FR 52989)	Directs federal agencies to ensure laws relating to the environment and natural resources are implemented in a manner that promotes cooperative conservation with an emphasis on local participation in federal decision-making and established a White House Conference on Cooperative Conservation to facilitate the exchanges of information and advice.
Executive Order 13443, Facilitation of Hunting Heritage and Wildlife Conservation, August 20, 2007 (72 FR 46537)	Directs federal agencies that have programs and activities that have a measurable effect on public land management, outdoor recreation, and wildlife management, including the Department of the Interior and the Department of Agriculture, to facilitate the expansion and enhancement of hunting opportunities and the management of game species and their habitat.
Federal-Aid Highway Act of 1958 (23 U.S.C. 207-209)	Authorized increased federal assistance to the states for the construction of roads and highways.
Federal-Aid Highway Act of 1962 (23 U.S.C. 214)	Created the federal mandate for urban transportation planning in the United States, based on the 3-C planning process.
Federal-Aid Highway Act of 1968 (23 U.S.C. 116)	Incorporated provisions designed to protect the environment and reduce the negative effects of highway construction, and launched the Traffic Operations Program to Improve Capacity and Safety (TOPICS) program.
Federal-Aid Highway Act of 1973 (23 U.S.C. 217)	Increased the flexibility in the use of highway funds for urban mass transportation.
Federal Cave Resource Protection Act of 1988 (16 U.S.C. 4301)	Provides for the protection of caves on lands under the jurisdiction of the Secretary, and the Secretary of Agriculture. Establishes terms and conditions for use permits, and penalties for violations.
Federal Insecticide, Fungicide, and Rodenticide Act of 1975 (7 U.S.C. 136 et. Seq.)	Establishes an extensive regulatory system for controlling the sale, distribution, and application of pesticides.
Federal Land Policy and Management Act of 1976, as amended (43 U.S.C. 1701 et seq.)	Outlines functions of the BLM Directorate, provides for administration of public lands through the BLM, provides for management of the public lands on a multiple use basis, and requires land-use planning including public involvement and continuing inventory of resources. The act establishes as public policy that, in general, the public lands will remain in Federal ownership, and also authorizes: • acquisition of land or interests in lands consistent with the mission of the Department and land use plans; • permanent appropriation of road use fees collected from commercial road users, to be used for road maintenance; • collection of service charges, damages, and contributions and use of funds for specified purposes; • protection of resource values; • preservation of certain lands in their natural condition; • compliance with pollution control laws; • delineation of boundaries in which the Federal government has right, title, or interest; • review of land classifications in land use planning; and modification or termination of land classifications when consistent with land use plans; • sale of lands if the sale meets certain disposal criteria; • issuance, modification, or revocation of withdrawals; • review of certain withdrawals by October 1991;

- exchange or conveyance of public lands if in the public interest;
- outdoor recreation and human occupancy and use;
- management of the use, occupancy, and development of the public lands through leases and permits;
- designation of Federal personnel to carry out law enforcement responsibilities;
- determination of the suitability of public lands for rights-of-way purposes (other than oil and gas pipelines) and specification of the boundaries of each right-of-way;
- recordation of mining claims and reception of evidence of annual assessment work.

Federal Land Transaction Facilitation Act of 2000 (43 U.S.C. 2301)	Allows the Bureau of Land Management to retain receipts from land sales and to use them to cover administrative costs and acquire properties to improve the nation's land management pattern.
Federal Noxious Weed Act of 1974, as amended (7 U.S.C. 2814)	Provides for the designation of a lead office and a person trained in the management of undesirable plants; establishment and funding of an undesirable plant management program; completion and implementation of cooperative agreements with State agencies; and establishment of integrated management systems to control undesirable plant species.
Federal Onshore Oil and Gas Leasing Reform Act of 1987 (30 U.S.C. 226, et seq.)	Establishes a new oil and gas leasing system, and changes certain operational procedures for onshore Federal lands.
Federal Power Act of 1920, as amended (16 U.S.C. 818)	Allows other uses of Federal waterpower withdrawals with Federal Energy Regulatory Commission approval.
Fish and Wildlife Conservation Act of 1980 (16 U.S.C. 2901-2911)	Authorizes financial and technical assistance to the States for the development, revision, and implementation of conservation plans and programs for nongame fish and wildlife.
Freedom of Information Act (FOIA)	Established that records in the possession of agencies and departments of the executive branch of the U.S. Government are accessible to the people; establishes statutory guidelines or procedures to help persons seeking information; sets standards for determining which records must be disclosed and which records may be withheld; and sets judicial remedies for those denied access. Source for FOIA definition; A Citizen's Guide to the FOIA (2003P: A guide to both the Freedom of Information Act and the Privacy Act prepared by the House Committee on Government Reform. http://www.fas.org/sgp/fois/citizen.html.
Fish and Wildlife Coordination Act of 1958 (16 USC 661 et seq)	Provides for wildlife conservation to be given equal consideration and coordination with other features of water resource development.
General Allotment Act (or Dawes Act) of 1887, as amended (24 U.S.C. 388-391)	Called for the allocation of a parcel of land to all members of an Indian tribe, based on the theory that Indians would be become more quickly assimilated if they were owners of a parcel of land and encouraged to pursue civilized agricultural pursuits as opposed to traditional means of existing by hunting, fishing and gathering.

General Mining Law of 1872, as amended (30 U.S.C. 22, et seq.)	Provides for locating and patenting mining claims where a discovery has been made for locatable minerals on public lands in specified States, mostly in the western United States.
Geothermal Steam Act of 1970 (30 U.S.C. 1001)	Authorizes the Secretary to issue leases for the development of geothermal resources.
Geothermal Steam Act Amendments of 1988	Lists significant thermal features within the National Park System requiring protection, provides for lease extensions and continuation of leases beyond their primary terms, and requires periodic review of cooperative or unit plans of development.
Highway Safety Act of 1966, as amended (23 U.S.C. 401-403)	Requires the federal government to encourage and assist each of the States in the establishment of a highway safety system.
Historic Sites Act of 1935 (16 U.S.C. 461)	Declares national policy to identify and preserve historic sites, buildings, objects, and antiquities of national significance, providing a foundation for the National Register of Historic Places.
Land and Water Conservation Fund Act of 1965, as amended (16 U.S.C. 460 et seq.)	Provides for the establishment of the Land and Water Conservation Fund (LWCF), special BLM accounts in the Treasury, the collection and disposition of recreation fees, the authorization for appropriation of recreation fee receipts, and other purposes. Authorizes planning, acquisition, and development of needed land and water areas and facilities.
Materials Act of 1947, as amended (30 U.S.C. 601-604 et seq.)	Provides for the sale of common variety materials for personal, commercial, or industrial uses and for free use for local, State, and Federal governmental entities.
Migratory Bird Conservation Act of 1929, as amended (16 U.S.C. 715) and treaties pertaining thereto	Provides for habitat protection and enhancement of protected migratory birds.
Mineral Leasing Act of 1920, as amended, (30 U.S.C. 181, et seq.)	Provides for leasing of coal, phosphate, sodium, potassium, oil, gas, oil shale, native asphalt, solid and semi-solid bitumen, bituminous rock, and gilsonite on lands containing such deposits owned by the United States, including those in national forests, but excluding those within the national petroleum and oil shale reserves. It preserves the right of pre-1920 oil shale mining claims to be patented, mandates a broad spectrum of requirements for lease management, and authorizes the Secretary to determine suitability of public lands for oil and gas pipeline rights-of-way.
Mineral Leasing Act for Acquired Lands of 1947 (30 U.S.C. 351-359)	Provides for the leasing of coal, phosphate, sodium, potassium, oil, gas, oil shale, and sulfur which are owned or acquired by the United States and which are within the lands acquired by the United States, with the consent of the head of the agency having jurisdiction over the lands containing such deposits. It provides that all mineral leasing receipts derived from leases under this act shall be paid into the same funds or accounts in the Treasury and shall be distributed in the same manner as prescribed for other receipts from the lands affected by the lease. The intention is that this act shall not affect the distribution of receipts pursuant to legislation applicable to such lands.
Mining and Minerals Policy Act of 1970, (30 U.S.C. 21a) (30 U.S.C. 1601, et seq.)	Establishes policy of fostering development of economically stable mining and minerals industries, their orderly and economic development, and studying methods for disposal of waste and reclamation.

Montana Stream Protection Act (SP 124 Permit)	Requires that a permit be obtained for any government (federal, state, county, or city) project that may affect the bed or banks of any stream in Montana.
Montana Natural Streambed and Land Preservation Act (Title 75 Chapter 2, MCA of 1975)	States the State of Montana's policy of protecting and preserving in their natural or existing state its natural rivers, streams, and the lands and property immediately adjacent to them; and the intent to minimize erosion and sedimentation by prohibiting unauthorized projects. Recognizes the needs of irrigation and agricultural use of Montana's rivers and streams and allows for availability for any useful or beneficial purpose as guaranteed by Montana's Constitution.
Montana Streamside Management Zone Law (Title 77-5-301 MCA)	Establishes the Streamside Management Zone (SMZ) to protect public interest in forest water quality, quantity, and dependent resources while still allowing operators to use practices appropriate to site-specific conditions.
Montana Water Use Act (Title 85, Chapter 2, MCA of 1973)	Declares that any use of water is a public use and that the waters within the state are the property of the state for the use or its people and are subject to appropriation for beneficial uses as provided in this chapter. Establishes policy of wise use and includes direction on water rights adjudication.
Montana Water Quality Act (75-5-301 MCA)	Directs the classification of all state waters in accordance with their present and future most beneficial uses and the formulation and adoption of water quality standards that meet specified requirements.
National Environmental Policy Act of 1969 (NEPA) (42 U.S.C. 4321 et seq.)	Requires the preparation of environmental impact statements for Federal projects which may have a significant effect on the environment. It requires systematic, interdisciplinary planning to ensure the integrated use of the natural and social sciences and the environmental design arts in making decisions about major Federal actions that may have a significant effect on the environment.
National Historic Preservation Act of 1966, as amended (16 U.S.C. 470)	Expands protection of historic and archaeological properties to include those of national, State and local significance. It also directs Federal agencies to consider the effects of proposed actions on properties eligible for or included in the National Register of Historic Places.
National Parks and Recreation Act of 1978 (16 U.S.C. 1242-1243)	Establishes a number of national historic trails which cross public lands.
National Trails System Act of 1968, as amended (16 U.S.C. 1241-1249)	Establishes a national trails system and requires that Federal rights in abandoned railroads be retained for trail or recreation purposes, or sold with the receipts to be deposited in the LWCF.
Native American Graves Protection and Repatriation Act of 1990 (25 U.S.C. 3001)	Requires agencies to inventory archaeological and ethnological collections in their possession or control (which includes non-federal museums) for human remains, associated funerary objects, sacred objects, and objects of cultural patrimony; identify them geographically and culturally; and notify appropriate tribes within 5 years.
Nuclear Waste Policy Act of 1982 (42 U.S.C. 10101 et seq.)	Established a plan for the safe handling, storage, and disposal of the nation's spent nuclear fuel and high-level radioactive waste, and a program of research, development, and demonstration regarding the disposal of spent nuclear fuel and high-level radioactive waste.

Occupational Health and Safety Act of 1970 (29 U.S.C. 651 et seq.)	Assures safe and healthful working conditions for working men and women by providing for standards; enforcement; assistance to states in their efforts; and research, information, education, and training in the field of occupational safety and health.
Pollution Prevention Act of 1990 (42 U.S.C. 13101-13109)	Requires and encourages prevention and reduction of waste streams and other pollution through minimization, process change, and recycling. Encourages and requires development of new technology and markets to meet the objectives.
Protection Act of September 20, 1922 (16 U.S.C. 594)	Authorizes the Secretary of the Interior to protect and preserve, from fire, disease, or the ravages of beetles, or other insects, timber owned by the United States upon the public lands, national parks, national monuments, Indian reservations, or other lands under the jurisdiction of the Department of the Interior owned by the United States.
Public Rangelands Improvement Act of 1978 (43 U.S.C. 1901-1908)	Provides for the improvement of range conditions to assure that rangelands become as productive as feasible for watershed protection, livestock grazing, wildlife habitat, and other rangeland values. The act also authorizes: • research on wild horse and burro population dynamics, and facilitates the humane adoption or disposal of excess wild free roaming horses and burros, and • appropriation of $10 million or 50% of all moneys received as grazing gees, whichever is greater, notwithstanding the amount of fees collected.
Reciprocal Fire Protection Act of May 27, 1955, as amended (42 U.S.C. 1856)	Authorizes agencies that provide fire protection for any property of the United States to enter into reciprocal agreements with other fire organizations to provide mutual aid for fire protection.
Recreation and Public Purposes (R&PP) Act of 1926, as amended (43 U.S.C. 869)	Authorizes the Secretary to classify public lands for lease or sale for recreation or public purposes. The R&PP Amendment Act of 1988 provides that suitable public lands may be made available for use as solid waste disposal sites, in a manner that will protect the United States against unforeseen liability.
Rehabilitation Act of 1973, Section 504 (29 U.S.C 791)	Requires federal agencies to ensure that federally assisted or federally conducted programming is accessible to people with disabilities. Access needs of people with visual impairments, hearing impairments and learning impairments must also be considered.
Reservoir Salvage Act of 1960 (16 U.S.C. 469), as amended by the Archaeological and Historic Preservation Act of 1974	Provides for the preservation of historical and archeological data (including relics and specimens) that might otherwise be irreparably lost or destroyed as the result of flooding or terrain alteration for any project, including dam construction, undertaken or licensed by an agency of the United States.
Resource Conservation and Recovery Act as amended by Federal Facility Compliance Act of 1992 (42 U.S.C. 6901-6992)	Authorizes EPA to manage, by regulation, hazardous wastes on active disposal operations. Waives sovereign immunity for Federal agencies with respect to all Federal, State, and local solid and hazardous waste laws and regulations. Makes Federal agencies subject to civil and administrative penalties for violations, and to cost assessments for the administration of the enforcement.

Rivers and Harbors Act of 1899 (33 U.S.C. 403 10)	Prohibits obstructing, building structures outside of established harbor lines, and altering the course, location, condition, or capacity of waters of the United States, except under certain specified circumstances or permits.
Safe Drinking Water Act Amendments of 1977 (42 U.S.C. 201)	Requires compliance with all Federal, State, or local statutes for safe drinking water.
Sikes Act (or the Act of September 15, 1960), as amended (16 U.S.C. 670 et seq.)	Provides for cooperation by the Departments of the Interior and Defense with State agencies in planning, development, and maintenance of fish and wildlife resources on military reservations throughout the United States. Authorizes conservation and rehabilitation programs on BLM and other lands (as of the 1974 law).
Soil Conservation and Domestic Allotment Act of 1935, as amended (Pub. L. 74-46)	Designed to support farm income by making soil-conservation and soil-building payments to participating farmers.
Soil Info. Assistance for Community Planning and Resource Development Act of 1996 (42 U.S.C. 3271 *et seq.*)	Directed that the USDA soil survey program of the United States should be conducted so that soil surveys would be available to meet needs of the States and other public agencies in connection with community planning and resource development.
Soil and Water Resources Conservation Act of 1977 (16 U.S.C. 2001)	Provides for conservation, protection, and enhancement of soil, water, and related resources.
Surface Mining Control and Reclamation Act of 1977 (30 U.S.C. 1201 et seq.)	Provides that lands may be declared unsuitable for surface coal mining where significant adverse impacts could result to certain wildlife species.
Surface Transportation Assistance Act of 1982 (P.L. 94-424, Sec. 126(d)).	Reduced the period of availability of apportioned funds from 4 years to 2 years, and stipulated that each State was to receive at least a minimum of 1/2 percent of the total Interstate apportionments for each of FYs 1980-1983.
Sustained Yield Act of 1937 (43 U.S.C. 1181)	Set the policy of managing revested Oregon and California Railroad and reconveyed Coos Bay Wagon Road grant lands for permanent forest production, allowing the timber to be sold, cut, and removed in conformity with the principal of sustained yield.
Taylor Grazing Act of 1934 (43 U.S.C. 315), as amended by the Act of August 28, 1937 (43 U.S.C. 1181d)	Authorizes the establishment of grazing districts, regulation and administration of grazing on the public lands, and improvement of the public rangelands. It also authorizes the Secretary to accept contributions for the administration, protection, and improvement of grazing lands, and establishment of a trust fund to be used for these purposes.
Timber Access Road Act of 1955 (P.L. 84-171)	Provides the Secretary of the Interior with the basic authority to acquire timber access roads and rights-of-way.
Toxic Substances Control Act of 1976 (15 U.S.C. 2601 et seq.)	Provides for EPA to restrict, limit, or otherwise control the use and distribution of chemicals that present an unreasonable risk of injury to health or the environment, with the goal of preventing the discharge of such chemicals into the environment.

Transportation Safety Act of 1974, with Hazardous materials Transportation Act amendments of 1976 and 1990 (49 U.S.C. 1801 et seq).	Empowers the U.S. Department of Transportation to regulate the transportation of hazardous materials by rail, aircraft, vessel, and public highway.
Treasury and General Government Appropriations Act for Fiscal Year 2001 (P.L. 106-554, Sec. 515)	Also referred to as the Data Quality Act, Sec. 515 provided for requirement of federal agencies to issue guidelines ensuring and maximizing the quality, objectivity, utility, and integrity of information they disseminate. Also established administrative mechanisms allowing affected persons to seek and obtain correction of information maintained and disseminated by agencies that does not comply with agency guidelines.
Uniform Federal Accessibility Standards(UFAS) (49 FR 31528)	The standards used to enforce the Architectural Barriers Act of 1968.
Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1971 (42 U.S.C. 4601)	Provides policy for federal acquisition of lands and interests in lands, and ensures the fair and equitable treatment of persons whose real property is acquired or who are displaced as a result of a Federal or Federally-assisted project.
Unlawful Inclosures of Public Lands Act of 1885	Declares the following to be unlawful if no claim, color of title, or asserted right has been properly entered in good faith under the general laws of the United States: • All inclosures of any public lands by any person, party, association, or corporation; • the maintenance, erection, construction, or control of any such inclosures; and • the assertion of a right to the exclusive use and occupancy of any part of the public lands of the United States. Source: Synopsized from U.S. Code Title 43, Section 1061 (23 Stat. 321). http://www.law.cornell.edu/uscode/43/1061.html.
Uranium Mill Tailings Radiation Control Act of 1978, as amended (42 U.S.C. 2014 et seq.)	Provides for a program of assessment and remedial action at inactive mill tailings sites; to regulate mill tailings during uranium or thorium ore processing at active mill operations; and to stabilize and control tailings after operations in a manner that is safe, environmentally sound, and minimizes or eliminates radiation health hazards to the public
Water Resources Planning Act (42 U.S.C. 1962)	Encourages the conservation, development, and utilization of water and related resources of the United States on a comprehensive and coordinated basis by the federal government, states, localities, and private enterprise.
Water Quality Act of 1987, as amended from the Federal Water Pollution Control Act of 1977 (33 U.S.C. 1251)	Reauthorized the Water Pollution Control Act (or Clean Water Act) of 1972 and strengthened pollution control standards.

Wild and Scenic Rivers Act of 1968, as amended (16 U.S.C. 1271 et seq.)	Provides for the development and management of certain rivers. Authorizes the Secretary to exchange or dispose of suitable Federally-owned property for non-Federal property within the authorized boundaries of any Federally-administered component of the National Wild and Scenic Rivers System.
Wild Free Roaming Horse and Burro Act of 1971, as amended by the Public Rangelands Improvement Act of 1978 (16 U.S.C. 1331-1340)	Provides for the management, protection, and control of wild horses and burros on public lands and authorizes "adoption" of wild horses and burros by private individuals.
Wilderness Act of 1964 (16 U.S.C. 1131 et seq.)	Provides for the designation and preservation of wilderness areas.

APPENDIX C – VISUAL RESOURCE MANAGEMENT CLASSES

Visual resource classes are categories assigned to public lands. The classes serve two purposes: (1) an inventory tool that portrays the relative value of the visual resources, and (2) a management tool that portrays the visual management objectives. There are four classes, I, II, III, and IV, as described below.

Visual resource management classes are assigned through RMP's. The assignment of visual management classes is ultimately based on the management decisions made in RMP's. However, visual values obtained through the visual resource inventory must be considered throughout the RMP process. All actions proposed during the RMP process that would result in surface disturbances must consider the importance of the visual values and the impacts the project may have on these values.

Management decisions in the RMP must reflect the value of visual resources. In fact, the value of the visual resource may be the driving force for some management decisions. For example, highly scenic areas which need special management attention may be designated as scenic Areas of Critical Environmental Concern and classified as VRM Class I based on the importance of the visual values.

Visual Resources will continue to be managed in accordance with the BLM 8400 Manual. All existing inventory data will be maintained and utilized when assessing visual impacts and needed contrast ratings for future management actions.

VRM	Class Objectives
Class I	The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.
Class II	The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.
Class III	The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.
Class IV	The objective of this class is to provide for management activities which require major modifications of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.

APPENDIX D – USE OF THE SIMPPLLE MODEL

USE OF THE SIMPPLLE PROCESS IN DEVELOPING RMP ALTERNATIVES

General Overview

Simulating Patterns and Processes at Landscape Scales (SIMPPLLE) is a computer modeling program that simulates vegetation patterns and processes emphasizing the dynamics of landscaped level change. It was developed for the U.S. Forest service, Region 1, as a management tool. SIMPPLLE's purpose is to help provide an understanding of the dynamics of where processes will occur across a landscape. The SIMPPLLE model has been utilized by the Beaverhead-Deerlodge National Forest during their Forest Plan Revision and during the BLM's Dillon Field Office Resource Management Plan revision.

SIMPPLLE was selected for use by the Butte Field Office (BFO) because it is both spatially and temporal explicit, meaning that landscape level vegetation change can be explored in relation to location and neighboring vegetation communities, as well as change within these communities over time. The SIMPPLLE model was used to: (a) simulate future vegetation changes caused by various disturbance processes at multiple landscape scales, (b) show trends in vegetative communities over the next 50 years as a result of fire suppression, (c) simulate historic vegetative conditions by running the model over 500 years with variables such as fire, insect and disease activity, (d) simulate management treatment alternatives for their impact on disturbance processes and the attainment of desired conditions defined at the landscapes scale, and (e) to provide a basis for identifying the probability of disturbance processes and vegetation conditions.

Vegetation Coverage

At the time the Resource Management Plan revision began, the BFO lacked a current comprehensive GIS vegetation coverage for the planning area. This vegetation coverage was needed in order to determine the existing condition, calculate potential treatment acres and to conduct effects analysis. It was determined that the existing Forest Service Potential Natural Vegetation (PNV) layer was not adequate for our purposes due to the size of parcels in the BFO and scattered ownership of BLM lands within the planning area.

A Vegetation Subgroup was established and tasked with creating a digital vegetation coverage that would be used to run the SIMPPLLE model. This subgroup consisted of seven members: two foresters, a wildlife biologist, a fire/fuels specialist, a soil scientist, a riparian/range/special status plants specialist, and a GIS specialist.

Ssurgo soil survey data obtained from the Natural Resources Conservation Service (NRCS) in Jefferson, Broadwater, Lewis and Clark, Gallatin and Deerlodge Counties was used to map vegetation on BLM and private lands. As a majority of these lands were determined to be grasslands, it was assumed that potential vegetation was the same as the existing vegetation.

Since no soil survey was available for Silver Bow County, BFO's soil scientist created a vegetation map for this county based on his extensive knowledge of the area. Park County also did not have a published soils survey, so the Potential Natural Vegetation coverage obtained from the U.S. Forest Service (USDA-FS, 2001a) was used to fill in any data gaps. This data layer was also used to fill any data omissions on the Gallatin National Forest.

The county soil surveys lumped grassland and sagebrush habitats into a "grassland" category. To determine sagebrush habitat, BFO's special status plant specialist created a map depicting sagebrush based on attributes in the soil surveys. Ssurgo soil survey data from NRCS for BLM and private lands in the BFO for Jefferson, Broadwater, Lewis and Clark, Gallatin, and Deerlodge Counties was queried for polygons with big sagebrush as part of the characteristic vegetation. This map was then merged with the vegetation coverage the BFO Soil Scientist created for Silver Bow County. Professional knowledge and additional data collected by previous vegetation survey were used to check the map and fill in gaps. Sagebrush mapping in Park and Beaverhead Counties was not completed due to incomplete soil survey data.

The BLM has detailed forest stand data that was used to map forested habitats on BLM managed lands. A crosswalk was developed to move the forest stand data from the existing database, Forest Vegetation Information System (FORVIS), to the vegetation coverage. The crosswalk included data for the following attributes: cover class, density, habitat type, size class, species type, dominant vegetation, and potential vegetation. This crosswalk extracted the information necessary to run the SIMPPLLE model.

Soil and vegetation data was obtained from the Beaverhead-Deerlodge and Helena National Forests and was used to map vegetation (forest, grassland, and shrubland) on Forest Service lands. Forest Service soil data was used in conjunction with Forest Service stand data to determine potential natural vegetation.

Encroachment of conifers within grasslands was mapped using orthophotos. This information was also used in the SIMPPLLE model. Encroachment of conifers in sagebrush was not mapped by the time the model was run (July 2005) but some mapping of encroachment within sagebrush was completed in August, 2005.

Agriculture, urban and mining lands were mapped using orthophotos for Deerlodge, Silver Bow, Jefferson, Lewis and Clark and Broadwater Counties and merged into the vegetation coverage. In Park and Gallatin Counties, agriculture lands were mapped using the FS Potential Natural Vegetation Grid.

All polygons less than eight acres in size were merged with adjacent polygons.

To run the SIMPPLLE Model, large polygons were broken down to polygons less than 250 acres in size. Insect and disease from the 2003 survey flights was provided by the Forest Service was added to the SIMPPLLE model database in an attempt to accurately represent the existing ground condition. The model was able to break out and summarize data for the 7 major watersheds in the field office.

SIMPPLLE Process

1. Gathering Data

The BFO began working with the Forest Service Rocky Mountain Research Station Fire Lab (RMRS) in 2003 to develop the data required for the SIMPPLLE Model as well as to determine how the model should be run. Discussion at this first stage centered on the data requirements for running a landscape analysis using the SIMPPLLE model. Data needs for running SIMPPLLE included a GIS coverage (ArcInfo format with polygon topology), with attributes of species, size class, and density for each vegetation polygon, as well as some way to stratify the vegetation (i.e. habitat group). Other optional attributes that enhance SIMPPLLE simulations and representation of the landscape include land ownership, a code indicating the presence or absence of roads, fire management zones, prior landscape processes (i.e. insect disease and activity), and a "special area" field that can be filled with anything the user decides would help to logically represent the landscape. An ArcInfo Digital Elevation Model (DEM) for the same spatial extent as the vegetation coverage was necessary to create a neighbor file, which, when paired with a vegetation file derived from the ArcInfo coverage, loads into SIMPPLLE to create a landscape ready for simulation (a file with the .area extension).

Since SIMPPLLE is a landscape level, process driven, spatially explicit simulation model, vegetation as it is represented on the entire landscape will influence and be influenced by the processes that cause change over time and space. In order for all vegetation polygons to be included in SIMPPLLE simulations, a contiguous landscape must be used with all polygons populated with vegetation information including water and nonforest conditions including rock and agriculture.

2. Cross-walk and Data Loading

The SIMPPLLE User's Guide describes the attributes used in with the model and can be downloaded from http://www.fs.fed.us/rm/ecology/publications/simpplle/.

Several errors were found by BFO personnel but these error were resolved with help from personnel at the Rocky Mountain Research Station Fire Lab. Errors are expected to be found a majority of the time following a cross-walk to SIMPPLLE attributes; the cross-walk is iterative and subject to expert knowledge of the most likely vegetation expected at specific locations on the landscape. Once the initial vegetation attributes were examined by the BFO, discussion followed with members of the Fire Lab about whether specific vegetation pathways should be developed for the BFO landscape in order to improve model behavior; several nonforest pathways were then adjusted.

Analysis of initial model behavior was accomplished by considering the landscape as current and looking at vegetation change over several decades, or time-steps, as they are represented in the SIMPPLLE environment. Further analysis was accomplished on the historical landscape conditions by running simulations out for several hundred years without fire suppression and then saving the "new" landscape as one example of the historical BFO landscape. From this new starting point, SIMPPLLE simulations were run and the output was compared to that obtained from the current condition. Users have the option to make multiple landscape representations so that various approaches to stratification can be tested such as breaking the landscape by ownership, or by differences in the special area field.

3. Adjusting the Vegetation

An initial iteration of a SIMPPLLE landscape representation provides managers with the opportunity to consider how well the vegetation is being modeled. Further adjustment of vegetation states as well as other aspects of vegetation change was accomplished by the BFO with some interaction by telephone and in meetings in Butte. Resultant files that augmented model behavior were developed for vegetation pathways, vegetation regeneration, and conifer encroachment. Further comparisons of current and historical conditions were made similar to the earlier iteration.

4. Processes

Fire is the most extensive process on the BFO landscape and BFO and Fire Lab personnel spent time describing fire behavior for the model. Files were developed to augment this behavior including better representations for fire occurrence, fire management zones (fire history based on data that can be provided from PCHA) and fire spread. Analysis of model behavior was conducted in a meeting at the BFO with personnel from the Fire Lab by running simulations of current and historical landscapes. Model behavior was analyzed using output comparisons as described above.

5. Alternative Development

Personnel from the BFO worked with the Fire Lab to develop management plan alternatives for the BFO. They discussed model treatment logic in SIMPPLLE and how to alter that logic for simulation. The Fire Lab added a "cutting" treatment for the WUI, dropped the follow-up treatment to "group selection," changed the "density change" logic for "commercial-thinning" (added density of 2 along with 3), and made changes to the follow-up treatment for "encroachment-thin-and-burn" and "ecosystem-thin-and-burn." Changes were also made to allow selection of JUSC for cutting. This aided in determining treatment schedules for the RMP alternatives.

6. Simulation Output and Reports

Once SIMPPLLE was behaving in an acceptable manner, simulations for the current condition with no management, historical, and current condition with management treatments applied were run. Macros for Excel were used with model output to display data trends and some time was spent working with the Rocky Mountain Research Station Fire Lab to put together displays. These include current trends and historical range of variation.

Considerations in Vegetation Treatments

Variables that where considered in development of the treatment schedule for alternative development included:

1. No acres were identified for treatment in the Sleeping Giant and Sheep Creek WSA/ACEC, Elkhorn WSA, Black Sage WSA and Humbug Spires WSA.
2. The effects of treatment in designated semi-primitive areas (including ROS and VRM categories) were considered.
3. Recreation sites and lands adjacent to recreation sites were taken into account.
4. Adjacent land ownership and management was taken into account.
5. Access to lands for treatment was considered including the existing road system.
6. Budget was not used during identification of acres for treatment.
7. Urban interface was taken into consideration and a "heavy-handed" approach was used in these areas. Urban interface areas were not identified for "ecosystem restoration." The Wildland Urban Interface Communities at Risk Hazard Assessment, 2004 – (The Helena Valley) was used as a tool for assessment.
8. Past treatments (logging and fire) as well as past wildfires were considered.
9. Topographical features (including rocky and steep sites) were taken into account.
10. Wildlife habitat including elk winter range, corridors, security habitat, and habitat for sensitive species was considered.
11. Errors in the vegetation coverage were addressed and corrections were made based on professional knowledge of the area.
12. The SIMPPLLE Model was used to determine the historical reference for each major watershed to guide in determining the number of acres treated.

Riparian

Polygons which had FORVIS data were selected from the BFO vegetation layer. It was assumed that if the polygon had FORVIS data it was/is forested. The BFO riparian layer was then queried for FAR reaches. The FAR selection was then clipped based on the FORVIS selection to get a forested FAR riparian shapefile. The clipped selection had repeated lengths which rendered acreage calculations impossible. The forested FAR riparian shapefile was then buffered by 200 feet. The buffer shapefile was converted to a coverage to produce an estimate of forested FAR riparian acres. This procedure was repeated for NFU and PFC reaches to get forested riparian acres for those as well.

Forested Riparian

FAR	3,037 acres	or	63 Miles
NFU	937 acres	or	19 Miles
PFC	3,725 acres	or	77 Miles

To get grass/shrub riparian acres, the FAR, PFC and NFU selections were summarized to get total lengths for each. These figures were used to derive acres by multiplying the total length by 400 feet (200ft buffer on each side) and dividing by 43,560. Forested riparian acres were subtracted to get "wide grass" acres. This figure was converted to square feet and divided by 400 to get back to lineal feet. The resulting figure was multiplied by 200 feet (100ft buffer on each side) and divided by 43,560 to get back to "narrow or actual" grass/shrub riparian acres as follows:

Grass/Shrub Riparian

FAR	1,228 acres	or	51 miles
NFU	499 acres	or	21 miles
PFC	1,703 acres	or	70 miles

Each FAR reach was reviewed and an estimation was made as to whether the reach could be treated or not through a fuels project, a forestry project or a prescribed burn project. This estimation was based on whether the reach was in a forested polygon, and the riparian coordinator's personal knowledge of each reach. Notations were made as to whether reaches had such problems as roads, altered flows, small land ownership, historical mining etc. Some of these determinations were based upon the riparian coordinator's personal knowledge of each reach-the riparian coordinator has visited approximately 75% of the reaches. The riparian coordinator also made an estimation whether reaches could be treated (or are being treated) by grazing practices, exclosures, AML reclamation etc. These reaches were then intersected with the FAR buffer polygon to derive acres.

FAR Treatable Acres

Fuels/forestry/prescribed burns	1,966 acres
AML reclamation, grazing, exclosures, weed treatment	689 acres
Limited treatment forested due to roads, ownership etc.	1,072 acres
Limited treatment grass/shrub due to roads, mining, etc.	542 acres

PFC Maintenance riparian acres

The riparian coordinator then went through each PFC reach and made an estimation as to whether the reach may be treated or not through a fuels project, a forestry project or a prescribed burn project to maintain the functioning condition of the reach. This estimation was based on whether the reach was in a forested polygon, whether the reach was in a WSA, whether the reach was along a major river (all major rivers were excluded from treatment—i.e. Yellowstone, Missouri, Jefferson, etc.) and personal knowledge of the riparian coordinator. The resulting reaches were then intersected with the PFC buffer polygon to derive acres.

PFC Maintenance Acres

Fuels/forestry/prescribed burns	1,789 acres

6. Simulation Output and Reports

Once SIMPPLLE was behaving in an acceptable manner, simulations for current with no management, historical, and current with management treatments applied were run. Macros for Excel are used with model output to display data trends and some time was spent working with the RMRS to put together displays. These include current trends and historical range of variation.

I

Watershed	FAR Treatable – Forest	FAR Limited Treatment – Forest	FAR Treatable – Grass/Shrub	FAR Limited Treatment – Grass/Shrub	PFC Main – Forest
Yellowstone	0	0	0	21	48
Big Hole	774	129	111	267	633
Upper Missouri	575	472	297	154	859
Jefferson	593	471	278	71	249
Gallatin	0	0	0	29	0
Upper Clark Fork	24	0	3	0	0
Blackfoot	0	0	0	0	0
Total	**1,966**	**1,072**	**689**	**542**	**1,789**

II

Watershed	FAR Forest Total	NFU Forest Total	PFC Forest Total	FAR Grass/Shrub	NFU Grass Shrub	PFC Grass/Shrub
Yellowstone	0	0	62	21	0	267
Big Hole	903	0	1,207	378	37	614
Upper Missouri	1,047	595	1,699	451	310	549
Jefferson	1,064	342	665	349	153	273
Gallatin	0	0	0	29	0	0
Upper Clark Fork	24	0	0	3	0	0
Blackfoot	0	0	92	0	0	0
Totals	**3,038**	**937**	**3,725**	**1,231**	**500**	**1,703**

APPENDIX E – BEST MANAGEMENT PRACTICES

The publications referenced in this appendix are sources of "Best Management Practices" (BMPs). BMPs are measures that have been developed by agency, industry, scientific, and/or working groups as voluntary methods for reducing environmental impacts associated with certain classes of activity. BLM typically uses these measures as guidelines or "project design features" during implementation planning at the activity and/or project-specific levels.

The list included in this appendix is not limiting, but references the most frequently used sources. As new publications are developed, BLM may consider those BMPs. In addition, many BLM handbooks (such as BLM Manual 9113-Roads and 9213-Interagency Standards for Fire and Aviation Operation) also contain BMP-type measures for minimizing impacts. These BLM-specific guidance and direction documents are not referenced in this appendix.

Planning implications: Use of Best Management Practices is not mandatory, since individual measures may not be appropriate for use in every situation. They may be added, dropped, or modified through plan maintenance.

NEPA implications: Only the wind energy development BMPs have been analyzed in a NEPA process. The use of other BMPs should be analyzed on a case-by-case basis in NEPA documents associated with projects on the public lands. These case-by-case analyses should not "tier to" the BMP publication as a way to dismiss environmental impacts (i.e., must still analyze and disclose the environmental considerations and effects associated with use of the BMP).

Montana Best Management Practices for Grazing

Developed by:	Working group with representation from: MSU College of Agriculture, Society of American Fisheries, Montana Stockgrowers Association, Montana Woolgrowers Association, USDI Bureau of Land Management, USDA Forest Service, USDA Natural Resources Conservation Service, Montana Farm Bureau, and Montana Dept. of Natural Resources and Conservation.
Publication reference:	N/A, first printed in 1999
Available From:	Conservation Districts Bureau, DNRC, PO Box 201601, Helena MT 59620-1601 (406-444-6667).
Description:	Describes BMPs for livestock grazing designed to protect and enhance water quality, soils, plant communities, and other rangeland resources. Explains how and why to use BMPs to manage upland rangeland, forested rangeland, and riparian areas; and describes how grazing BMPs fit into a grazing management plan

Water Quality BMPs for Montana Forests

Developed by:	Montana State University Extension Service
Publication reference:	Logan, R. 2001. Water Quality BMPs – Best Management Practices for Montana Forests. EB158, MSU Extension Forestry, Missoula, MT. 58pp.
Available from:	MSU Extension Forestry, 32 Campus Dr, Missoula MT 59812, OR MSU Extension Publications, PO Box 172040 Bozeman MT 59717
Description:	Discusses methods for managing forest land while protecting water quality and forest soils. Intended for all forest land in Montana, including non-industrial private, forest industry, and state or federally-owned forests. These are preferred (but voluntary) methods that go beyond Montana State Law (Streamside Management Zones). Includes definitions, basic biological information, and BMPs for Streamside Management Zones; road design, use, planning and locating, construction, drainage, and closure; stream crossings, soil, timber harvesting methods, reforestation, winter planning, and clean-up.

Montana Placer Mining BMPs

Developed by:	Montana Bureau of Mines and Geology
Publication Reference:	Special Publication 106, October 1993
Available from:	Montana Bureau of Mines and Geology, Main Hall, Montana College of Mineral Science and Technology, Butte MT 59701
Description:	Provides guidelines for planning, erosion control, and reclamation in arid to semi-arid, alpine, and subalpine environments, to prevent or decrease environmental damage and degradation of water quality.

BMPs for Wind Energy

Developed by:	Bureau of Land Management
Publication reference:	Wind Energy Development Programmatic EIS
Available From:	FEIS Chapter 2 (section 2.2.3.2) at http://windeis.anl.gov/
Description:	As part of the proposed action, BLM developed BMPs for each major step of the wind energy development process, including site monitoring and testing, plan of development preparation, construction, operation, and decommissioning. General BMPs are available for each step, and certain steps also include specific BMPs to address the following resource issues: wildlife and other ecological resources, Visual resources, Roads, Transportation, Noise, Noxious Weeds and Pesticides, Cultural/Historic Resources, Paleontological Resources, Hazardous Materials and Waste Management, Storm Water, Human Health and Safety, monitoring program, air emissions and excavation and blasting activities.

Montana Guide to the Streamside Management Zone Law

Note:	The Montana Guide to the Streamside Management Zone Law is a field guide to compliance with State of Montana Law 77-5-301[1] MCA.
Developed by:	Montana Department of Natural Resources and Conservation Service Forestry Bureau, in cooperation with Montana Department of Environmental Quality, Montana Logging Association, Montana Wood Products Association, Plum Creek Timber LP, USDA Forest Service, USDI Bureau of Land Management
Publication reference:	Revised August 2002
Available From:	Montana Department of Natural Resources and Conservation, 2705 Spurgin Road, Missoula MT 59801-3199, (406)542-4300, or local MT DNRC field office.
Description:	MT State Law (77-5-301[1] MCA). Complementary BMPs are found in the Water Quality BMPS for Montana Forests (also referenced in this appendix). Provides definitions, stream classifications, and guidelines on the seven forest practices prohibited by Montana law in SMZs (broadcast burning, operation of wheeled or tracked vehicles except on established roads, the forest practice of clearcutting, the construction of roads except when necessary to cross a stream or wetland; the handling, storage, application, or disposal of hazardous or toxic materials in a manner that pollutes streams, lakes, or wetlands, or that may cause damage or injury to humans, land, animals, or plants; the side casting of road material into a stream, lake, wetland, or watercourse; and the deposit of slash in streams, lakes, or other water bodies.

Erosion and Sediment Control Practices: Field Manual

Developed by: Prepared for the Montana Department of Transportation

Publication reference: FHWA/MT-030003/8165

Available From: National Technical Information Service, Springfield, VA 21161

Description: The Erosion and Sediment Control Best Management Practices Construction Field Manual was developed to assist in design, construction, and post-construction phases of MDT projects. This manual provides background to concepts of Erosion and Sediment Control. Most of MDTs Best Management Practices are listed within the manual based on application categories. Each BMP is described; its applications and limitations are listed, as well as its design criteria. Construction phase and post-construction phase BMPs are described. This manual is a field guide and condensed version of the Erosion and Sediment Control Design Construction Best Management Practices Manual. For more detailed discussion on topic found within, refer to the Erosion and Sediment Control Construction Best Management Practices Manual.

Erosion and Sediment Control Practices: Reference Manual

Developed by: Prepared for the Montana Department of Transportation

Publication reference: FHWA/MT-030003/8165

Available From: National Technical Information Service, Springfield, VA 21161

Description: The Erosion and Sediment Control Construction Best Management Practices Manual was developed to assist in the design, construction, and post-construction phases of MDT projects. This manual provides background to State and Federal regulations associated with erosion and sediment control practices including a general overview of the erosion and sediment processes. Best Management practices are listed within the manual based on application categories. Each BMP is described; its applications and limitations are listed, as well as its design criteria. The design phase includes development of construction plans, NOI, and SWPPP. Construction phase includes the finalization of the SWPPP, NOI, and the implementation of BMPs. Post-Construction phase includes monitoring, maintenance, and removal activities.

BMPs for Fluid Minerals

Developed by: Bureau of Land Management

Publication reference BLM/WO/ST-06/021+3071

Available from: Online at: http://www.blm.gov/bmp/

Online at: http://www.mt.blm.gov/oilgas/operations/goldbook/goldbook1.html

Online at: http://www.mt.blm.gov/oilgas/operations/goldbook/Stand_Enviro_Color.pdf

Online at: http://www.mt.blm.gov/oilgas/operations/color.pdf

Description: BMPs for oil and gas demonstrate practical ideas which may eliminate or minimize adverse impacts from oil and gas development to public health and the environment, landowners, and natural resources; enhance the value of natural and landowner resources; and reduce conflict. The publication reference is to the “Gold Book” which is formally titled “Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development.” In addition, the first internet citation is to a location maintained by the Washington Office of the BLM containing general and technical information on the use and application of BMPs. The second location refers the reader directly to an online version of the “Gold Book.” The third and fourth locations refer the reader to color charts for use in selecting paint colors for oil and gas facilities.

Montana Non-Point Source Management Plan

Developed by:	Montana Department of Environmental Quality, Water Quality Planning Bureau, Watershed Protection Section
Publication reference:	2007
Available From:	Montana Department of Environmental Quality, Water Quality Planning Bureau, Watershed Protection Section, P.O. Box 200901, Helena, MT 59620-0901 Online at: http://www.deq.state.mt.us/wqinfo/nonpoint/2007NONPOINTPLAN/Final/NPSPlan.pdf

Description: This document describes the Montana Department of Environmental Quality's (DEQ) updated strategy for controlling nonpoint source (NPS) water pollution, which is the state's single largest source of water quality impairment. NPS pollution is contaminated runoff from the land surface that can be generated by most land use activities, including agriculture, forestry, urban and suburban development, mining, and others. Common NPS pollutants include sediment, nutrients, temperature, heavy metals, pesticides, pathogens, and salt. The purpose of the Montana NPS Pollution Management Plan (Plan) is: 1) to inform the state's citizens about NPS pollution problems and 2) to establish goals, objectives, and both long-term and short-term strategies for controlling NPS pollution on a statewide basis. The goal of Montana's NPS Management Program is to protect and restore water quality from the impacts of non-point sources of pollution in order to provide a clean and healthy environment.

APPENDIX F – LAND HEALTH STANDARDS

STANDARDS FOR RANGELAND HEALTH AND GUIDELINES FOR LIVESTOCK GRAZING MANAGEMENT BUTTE DISTRICT

Preamble

The Butte Resource Advisory Council has developed standards for rangeland health and guidelines for livestock grazing management for use on the Butte District of the Bureau of Land Management (BLM). The purpose of the standards and guidelines are to facilitate the achievement and maintenance of healthy, properly functioning ecosystems within the historic and natural range of variability for long-term sustainable use.

The Butte Resource Advisory Council determined that the following considerations were very important in the adoption of these standards and guidelines:

1. For implementation, the BLM should emphasize a watershed approach that incorporates both upland and riparian standards and guidelines.
2. The standards are applicable to rangeland health, regardless of use.
3. The social and cultural heritage of the region and the viability of the local economy, are part of the ecosystem.
4. Wildlife is integral to the proper function of rangeland ecosystems.

Standards

Standards are statements of physical and biological condition or degree of function required for healthy sustainable rangelands. Achieving or making significant progress towards these functions and conditions is required of all uses of public rangelands as stated in 43 Code of Federal Regulations 4180.1. Baseline, monitoring and trend data, when available, should be utilized to assess compliance with standards.

Butte STANDARD #1: Uplands are in proper functioning condition.

- As addressed by the preamble to these standards and as indicated by:

Physical Environment

- erosional flow patterns;
- surface litter;
- soil movement by water and wind;
- soil crusting and surface sealing;
- compaction layer;
- rills;
- gullies;
- cover amount; and
- cover distribution.

Biotic Environment

- community diversity;
- community structure;
- exotic plants;
- photosynthesis activity;
- plant status;
- seed production;
- recruitment; and
- nutrient cycle.

The determination of rangeland health should be based on the evaluation of three criteria: degree of soil stability and watershed function, nutrient cycles and energy flows, and available recovery mechanisms.

Indicators to assess soil stability and watershed function relate to two fundamental processes of watershed degradation: (1) Soil erosion by wind and water; and (2) infiltration or capture and utilization of precipitation. Indicators such as rills, gullies, flow patterns, pedestaling and compaction, may be used to assess watershed condition.

Indicators that can be used to evaluate nutrient cycles and energy flows relate to distribution of plants, litter, roots, and photosynthetic period; i.e., plant community diversity and structure, exotic plants, photosynthetic activity and plant status.

Recovery mechanisms or plant demographic indicators may include increasing vegetative cover, plant vigor, kind, and number of seedlings, and changes in plant age distribution.

- Physical environmental features of a proper functioning watershed are indicated by:
  - little evidence of soil erosion by wind and/or water;

- rills, gullies, pedestaling, flow patterns are not present (significant);
- surface sealing and soil crusting is not evident;
- plant (ground) cover and litter accumulation is adequate to protect site; and
- natural disturbance events are integral to proper ecosystem function.

- Biotic environment features of a proper functioning watershed are indicated by:
  - variety and number of plant life-forms (grass, forb, shrub, tree, succulent) across the site;
  - plants exhibit a good diversity of size, height, distribution, and age/class well distributed;
  - exotic plants, weeds are absent or sparse on site;
  - plants display normal growth and root development;
  - photosynthesis activity occurs throughout the site;
  - plants are alive, productive with well developed root systems;
  - seed stalks/seed adequate for stand maintenance for all life-forms;
  - litter distribution and incorporation is uniform across site; and
  - nutrient/energy cycle mechanisms are adequate for plant maintenance.

Butte STANDARD #2: Riparian and wetland areas are in proper functioning condition.

- As addressed by the preamble to these standards and as indicated by:

Hydrologic

- flood plain inundated in relatively frequent events (1-3 years);
- amount of altered streambanks;
- sinuosity, width/depth ratio, and gradient are in-balance with the landscape setting (i.e., landform, geology, and bioclimatic region);
- riparian zone widening; and
- upland watershed not contributing to riparian degradation.

Erosion Deposition

- flood plain and channel characteristics; i.e., rocks, coarse and/or woody debris adequate to dissipate energy;
- point bars are vegetating;
- lateral stream movement is associated with natural sinuosity;
- system is vertically stable;
- stream is in balance with water and sediment being supplied by the watershed (i.e., no excessive erosion or deposition); and
- bare ground.

Vegetation

- reproduction and diverse age structure of vegetation;
- diverse composition of vegetation;
- species present indicate maintenance of riparian soil moisture characteristics;
- streambank vegetation is comprised of those plants or plant communities that have deep binding root masses capable of withstanding high streamflow events;
- utilization of trees and shrubs;
- riparian plants exhibit high vigor;
- adequate vegetative cover present to protect banks and dissipate; energy during high flows; and
- plant communities in the riparian area are an adequate source of large woody debris.

Broadly, "proper functioning condition" may be defined as the ability of a stream to perform its riparian functions. These functions include sediment filtering, bank building, water storage, aquifer recharge, and hydrologic energy dissipation.

No single factor or characteristic of a riparian site can provide a complete picture of either that site's condition or the direction of its successional change. Things considered "negative" in traditional evaluations of ecological sites may not be such for riparian sites. For example, the percent of exposed soil surface, which often reflects overgrazing or erosion on upland sites, may be a result of normal riparian activity; sediment deposition resulting after spring runoff, or a high water event.

Hydrology\Streambanks

The hydrology of a riparian area is perhaps its most important characteristic. Changes in hydrology may result in short and long-term vegetative changes. In some situations, construction (rip rap, roads, railroads, etc.) has influenced the streambanks and stability has been increased over the natural levels. These streambanks may eventually lose their stability, and become altered. This generally occurs if the problems which caused the weak streambanks have not been remedied. Also, constructed streambanks (especially those with rip rap) will often disrupt the normal energy dissipation of the stream and eventually the meandering of a stream can result in the erosion of streambanks downstream.

Lateral Cutting

Lateral cutting is indicated by new stream-caused bank disruption along the outside of stream curves, and much less commonly along the straight portions of a stream. A high degree of active lateral cutting can indicate a degraded watershed.

Altered Streambanks

In many instances, land uses have degraded streambanks, accelerating stream movement across the flood plain. We define altered streambanks as those having impaired structural integrity (strength or stability) due to human-caused activities such as exposed soil surfaces from cattle trails and wallows, hiking and ATV trails, roads, logging skid trails, mining activities, etc.

Deep Binding Root Mass

Properly functioning streambanks are "armored by both vegetation and bank rock materials (e.g., boulders and cobbles). There have been few studies documenting the depth and extent of root systems of various plant species. Despite this lack of documented evidence, some generalizations can be made. All tree and shrub species are considered to have deep, binding root masses. Among riparian herbaceous species, the first rule is that annual plants do not have deep, binding root masses. Perennial species offer a wide range of root mass qualities. Some rhizomatous species, such as the deep-rooted sedges, are excellent streambank stabilizers. Other rhizomatous species, such as Kentucky bluegrass, have only shallow root systems and are poor streambank stabilizers. Still others such as Baltic rush, appear to be intermediate in their ability to stabilize banks.

Downcutting

Active downcutting of a stream is often hard to recognize. Perched wetland vegetation and streambank features, plus the lack of a separate layer of channel bottom materials (i.e., the stream flows directly on the substrate materials), can be clues to downcutting. A stream is incised when downcutting of the stream has resulted in a width to depth ratio so low that average 2-year floods do not come out of the banks.

Soils/Geology

The soils and geology (landform and parent material) of a riparian site influence how the site reacts to disturbances and changes over time. Changes in physical characteristics are often (but not always) more difficult to remedy through management actions than are vegetative changes. The depth and texture of soil, of a riparian site, influences the capacity of that site to hold water (act as a sponge) for prolonged late season flows and support desired vegetation.

Bare Ground

Exposed soil surface is important in evaluating the health of riparian areas for several reasons: (1) vulnerability to erosion; (2) it may contribute to, as well as reflect, streambank deterioration; (3) the more exposed soil, the less vegetation is available for soil protection and sediment entrapment; and (4) exposed soil provides opportunity for invasion by noxious weeds and undesirable species.

Vegetation

Because they are more visible than soil or hydrological characteristics, plants may provide early indications of riparian health.

Reproduction of Trees and Shrubs

One of the clearest indicators of ecological stability, and subsequent health, is the presence of all age classes (seedling, sapling, pole, mature, decadent, and dead) of tree and shrub species where the potential exists.

Dead and Decadent Trees and Shrubs

The amount of dead and decadent material in trees and shrubs is another indicator of the overall "health" of riparian areas. Large amounts of decadent and dead woody material can indicate severe stress due to high levels of browsing, and/or dewatering of the site from artificial or natural causes. If severe enough, this may change the potential from a riparian to an upland site. Large amounts of decadent and dead woody material may indicate fluctuations in climate, such as severe winter temperatures, spring freezes, or insect infestations. In all cases, the overall biotic health is affected and may have implications on physical features of a stream such as streambank integrity, channel incisement, and lateral cutting.

Utilization of Trees and Shrubs

Heavy utilization by livestock and/or wildlife can prevent the regeneration or establishment of woody species and, thus block succession of the plant community toward a later seral stage. As with herbaceous species, excessive use of these woody species may cause their elimination from the site and their replacement by disturbance-induced species or undesirable invaders.

Plant Composition

The presence of disturbance-induced herbaceous plants (either native or introduced) may indicate that the site could be healthier and thus is not performing its optimum riparian functions. Most of these species provide less soil holding and sediment trapping capability, and less desirable forage for livestock and wildlife.

Butte STANDARD #3: Water quality meets State standards.

- As addressed by the preamble to these standards and as indicated by:
  - dissolved oxygen concentration;
  - pH;
  - turbidity;
  - temperature;
  - fecal coliform;
  - sediment;
  - color;
  - toxins; and
  - other parameters: ammonia, barium, boron, chlorides, chromium, cyanide, endosulfan, lindane, nitrates, phenols, phosphorus, sodium, sulfates, etc.

When discussing rangeland health, water quality is a relative term which must be associated with water-use to become meaningful. Since the beginning of time, natural processes have influenced the chemical, physical, and biological characteristics of water. The natural quality of water varies from place to place, with the season of the year, with the climate, and with the kind of rock and soil through which water moves. After reaching the earth, water dissolves minerals from the earth's crust, percolates through organic materials such as roots and leaves, and reacts with living things such as microscopic organisms like plankton and algae. Natural water quality is changed by stream sediments; it is modified by temperature, soil bacteria, and evaporation. These and other factors determine the quality of natures "impure" water.

Water quality criteria specify concentrations of water constituents which, if not exceeded, are expected to support an aquatic ecosystem suitable for higher uses of water. Water quality criteria are intended to protect essential and significant life in water, as well as the direct users of water, and also to protect life that is dependent on life in water for its existence.

- Some of the common indicators of water quality are:
  - Dissolved oxygen concentration (DO)-is a function of temperature of the water, altitude and barometric pressure. The ability of water to hold oxygen decreases with the increases in temperature, altitude and dissolved solids. This is important in fish spawning areas where DO levels must be maintained at specific levels for good growth and general well being of fish and associated biota.
  - pH (hydrogen-ion concentration)-is an indicator of acidity and/or alkalinity and an index of hydrogen-ion activity. Lower values indicated acid, higher values indicated alkaline. Fresh water organisms function properly if the pH ranges from 6.0 to 9.0 units. pH concentrations below the recommended level are toxic to fish and other aquatic organisms.
  - Turbidity-is the disturbance of water due to the presence of suspended matter such as clays, silt, organic matter, and various effluents. It is the expression of the optical property of water. Excess turbidity reduces light penetration, which reduces photosynthesis by phytoplankton, and submerged vegetation.
  - Temperature-is an important function which affects aquatic productivity. Temperature changes may result from natural climatic conditions due to man's manipulation of the riparian environment. Temperature is a function of location, season, time, duration of flow, depth, and many other variables. Aquatic biota are adapted to certain thermal conditions existing in the habitat for their survival and well being. The interrelationship between these conditions is so great that small changes in temperature may have far-reaching effects.
  - Coliform groups-include bacteria organisms in their natural habitat and sources; i.e., feces, soil, water, vegetation, etc. Fecal coliform may be an indicator of recent fecal pollution. Other coliform organisms may be the result of plant and soil runoff water.
  - Sediment-is a measure of suspended sand, silt, colloid and organic matter which will settle in time to the stream bottom. They originate from sources such as erosion, mine waste, plowed fields, construction projects, natural erosion, or vegetative manipulation. They may affect fisheries by covering the bottom of the stream or lake with a blanket of material that destroys the bottom fauna or spawning grounds for fish.
  - Color-is attributed to substances in solution after the suspensoid have been removed. It may be organic or inorganic substances that affect photosynthesis activity in the water. Organic substances include humic materials, peat, aquatic plants, etc. Inorganic sources include iron and manganese compounds, chemicals, industrial waste, etc.
  - Toxins-are those compounds or substances which are found in by-products or waste of the various industries or activities that make their way into water sources which produce a variety

of effects on fish or alter the biological productivity of water sources.

- Acceptable water quality is indicated by:
- Dissolved oxygen concentrations-DO concentrations are being maintained at or near saturation levels.
- pH-concentrations are at or near recommended State levels.
- Turbidity-readings do not exceed Jackson Turbidity Unit readings for the water source.
- Temperature-water temperature readings meet State standard preferred for good growth and productivity.
- Coliform-organisms of the coliform group do not exceed State average for the site.
- Sediment-water normally contains suspended solids that do not exceed State standard.
- Color-water color does not limit or significantly restrict photosynthesis processes.
- Toxins-levels are in conformance with State standard.

Butte STANDARD #4: Air quality meets State standards.

- As addressed by the preamble to these standards and as indicated by:

  Section 176(c) of the Clean Air Act, which states that activities of all Federal agencies must conform to the intent of the appropriate State Air Quality Implementation Plan and not:

  - cause or contribute to any violations of ambient air quality standards;
  - increase the frequency of any existing violations; and
  - impede the State's progress in meeting its air quality goals.

Montana Air Quality Standards

PM-10	50 $\mu g/m^3$ annual average 150 $\mu g/m^3$ 24-hour average*
Sulfur Dioxide	0.02 ppm annual average 0.10 ppm 24-hour average * 0.50 ppm 1-hour average **
Carbon Monoxide	23 ppm hourly average* 9.0 ppm 8-hour average *
Nitrogen Dioxide	0.05 ppm annual average 0.30 ppm hourly average*
Ozone	0.10 ppm hourly average*
Lead	1.5 $\mu g/m^3$ 90-day average
Foliar Fluoride	35 $\mu g/g$ grazing season average 50 $\mu g/g$ monthly average
Settled Particulate	10 mg/m^2 30-day average Matter (dustfall)
Hydrogen Sulfide	0.05 ppm hourly average*
Visibility	particle scattering coefficient of 3x10-5 per meter annual average***

* Not to be exceeded more than once per year.
** Not to be exceeded more than 18 times per year.
*** Applies to PSD mandatory Class I areas.

ppm = parts per million

$\mu g/g$ = micrograms per gram

$\mu g/m^3$ = micrograms per cubic meter

The Clean Air Act established the Prevention of Significant Deterioration (PSD) regulations which set limits for increases in ambient pollution levels and established a system for preconstruction review of new major air pollution sources. Three PSD classes have been established: Class I, Class II, and Class III. Class I areas consist of all international parks, national parks greater than 5,000 acres, national wilderness areas greater than 5,000 acres, and national wildlife refuges which existed on August 7, 1977, when the amendment was signed into law.

Protection of air quality is provided to Class I areas by severely limiting the amount of additional human-caused air pollution which can be added. All other areas, except non-attainment areas, are classified as Class II in which a greater amount of additional human-caused pollution may be added. In no case, however, may pollutant concentrations exceed the National or State ambient air quality standards.

Butte STANDARD #5: Provide habitat as necessary, to maintain a viable and diverse population of native plant and animal species, including special status species.

- As addressed by these standards and as indicated by:
  - plants and animals are diverse, vigorous and reproducing satisfactorily, noxious weeds are

absent or insignificant in the overall plant community;

- spatial distribution of species is suitable to ensure reproductive capability and recovery;
- a variety of age classes are present;
- connectivity of habitat or presence of corridors prevents habitat fragmentation;
- diversity of species (including plants, animals, insects and microbes) are represented; and
- plant communities in a variety of successional stages are represented across the landscape.

BLM is charged with managing and developing habitat for a large variety of fish, wildlife, and special status species of plants. Basic habitat considerations can be categorized as including food, water, cover, and space. Specific habitat requirements often vary depending on what geographic area is being considered, species which are present, and the nature and extent of other uses which may be competing. A review of components of the above listed standards (Proper Functioning Riparian-Wetland areas, Uplands and Water Quality) will provide much of the requirements needed to achieve fish, wildlife, and special status plant habitat.

Guidelines

Butte GUIDELINE #1:

Manage grazing to maintain or improve watershed vegetation, biodiversity, and flood plain function. Maintain or improve riparian vegetative cover and structure to trap and hold sediments during run-off events to rebuild streambanks, restore/recharge aquifers, and dissipate flood energy. Promote deep-rooted herbaceous vegetation to enhance streambank stability. Where potential for woody shrub species (willows, dogwood, etc.) exists, promote their growth or expansion to aid in controlling access to streambanks, and to provide wildlife cover.

Butte GUIDELINE #2:

Pastures and allotments will be periodically inventoried to determine their relative suitability for livestock grazing. Topography, slope, distance from water, or vegetation habitat types, wildlife, channel types, soil types, and other resource values must be considered when determining grazing potential. Specific areas could be excluded from grazing, fenced into separate management pastures, or managed more intensively.

Butte GUIDELINE #3:

Management strategies for livestock grazing should produce sustainable hydrological, vegetative, and soil conditions. Thresholds for acceptable streambank alteration and vegetation utilization can be site-specific, and they should be the basis for establishing terms and conditions for allotments. These thresholds should be consistent with standards and result from application of scientifically acceptable hydrological and biological principles. Each allotment must have a monitoring plan, and monitoring results should be critical input to grazing system design. Long-term analysis of trend shall be the primary monitoring tool, and will be augmented by short term monitoring information. Monitoring plans should address rangeland standards including hydrologic, vegetative, and soil conditions.

Long-term and short-term monitoring attributes may include:

Hydrologic

- stream morphology; and
- streambank alteration.

Vegetative

- species composition;
- plant density;
- demographics;
- stubble height; and
- utilization.

Soils

- percent bare ground;
- compaction; and
- pedestaling.

Self-monitoring by permittee should be encouraged, but with these sideboards:

- permittee's data and BLM's data should be comparable;
- BLM must perform some level of compliance monitoring for each self monitored allotment to ensure the permittee's monitoring is being done and it is valid;
- there should be regular reporting of self-monitoring data; and
- when appropriate, monitoring should include the use of reference sites (such as exclosures).

Permittees and interested members of the public should be able to participate in the development of monitoring plans.

Butte GUIDELINE #4:

Compatible seasons and duration of use, rest periods, stocking rates, structural facilities, and management activities, should be designed and implemented to ensure that standards are achieved.

Butte GUIDELINE #5:

The development of springs and seeps or other projects affecting water and associated resources shall be designed to protect the ecological functions, processes and native species of those sites.

Butte GUIDELINE #6:

Locate facilities (e.g., corrals, water developments) away from riparian areas and wetlands when possible.

Butte GUIDELINE #7:

Supplemental salt and minerals should not be placed adjacent to watering locations or in riparian-wetland areas so not to adversely impact streambank stability, riparian vegetation, water quality, or other sensitive areas. Placement of salt in upland sites should consider critical winter wildlife habitat.

Butte GUIDELINE #8:

Noxious weed control is essential and should include: cooperative agreements, public education, and integrated pest management (mechanical, biological, chemical). Butte RAC has addressed weeds in a Resolution dated May 8, 1996 (attached).

Butte GUIDELINE #9:

Native species are preferred. Non-native species, where contributing to proper ecosystem function, are acceptable.

Butte GUIDELINE #10:

Livestock management should utilize Best Management Practices for livestock grazing that meet or exceed those approved by the State of Montana in order to maintain, restore or enhance water quality.

Butte GUIDELINE #11:

Grazing management practices should maintain or improve habitat for federally listed threatened, endangered, and sensitive plants and animals.

APPENDIX G – WILDLIFE

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THREATENED OR ENDANGERED SPECIES SCREENS

Grizzly bears and lynx are the listed species that occur throughout the Butte Field Office. This appendix describes analysis screens developed by a Level 1 team of interagency field biologists to facilitate, streamline, and ensure consistency across administrative boundaries during Section 7 consultation under the Endangered Species Act.

The screens are designed to identify simple, straightforward actions that have insignificant or discountable effects on listed species. If proposed actions are fully compliant with the wildlife screens, and the screen leads to a "not likely to adversely affect" conclusion, they will likely be covered for terrestrial species by a programmatic concurrence from the U.S. Fish and Wildlife Service. These proposed actions could proceed once the appropriate documentation (i.e. biological assessment or worksheet with appropriate documentation) is completed. The screens are not all inclusive because some projects warrant additional analyses from the onset. Furthermore, even though an action is identified in the screen, the standard consultation procedure could still be required. A qualified wildlife biologist is responsible for implementing the screening process.

A wildlife screen is attached for the grizzly bear. Measures identified in the Lynx Conservation and Assessment Strategy (LCAS) will serve as the screen for lynx

The Level 1 team is currently determining the appropriate format documentation procedure for the wildlife screening process. At a minimum, the action agency would be required to submit periodic progress reports for NLAA actions that have been consulted on using the programmatic concurrence.

The following sections provide guidance on how to use the wildlife screens and emphasize when the programmatic concurrence would not apply. If programmatic concurrence does not apply, the standard[1] section 7 process would occur. The process described here follows and compliments the National Fire Plan consultation strategy. The screens developed for the National Fire Plan process consider the effects of certain fire-related projects and may be used to screen all National Fire Plan projects. The screens presented here consider the effects of most other activities.

CONDITIONS APPLICABLE TO ALL SCREENS

The programmatic concurrence applies to Forest Service and BLM projects or actions where the biological assessment clearly leads to a "not likely to adversely affect" (NLAA) determination. Use of the consultation screens is intended to be a tool to arriving at an effects determination; the biologist must consider the effects of the action added to the environmental baseline and cumulative effects. The concurrence is expressly limited to those simple, straightforward actions that will have documentation supporting insignificant or discountable effects on wildlife. More complex projects that do not clearly lead to an NLAA determination or those projects for which the project biologist has any threatened and endangered wildlife species concerns do not qualify for this programmatic concurrence. For these projects, biologists should follow standard consultation processes.

Further, projects not meeting or included in the species-specific criteria are not covered by the programmatic consultation and must follow the standard processes for conducting project analysis, biological assessment development, and consultation. Several activities are not included in the species' screens because the nature of the activity warrants additional consideration provided through standard consultation procedures.

If one species does not meet the screening criteria, then standard consultation procedures need to be followed for all species. However, it is possible to use the screens as a documentation process for those species that fit the screens and include this documentation alongside the analysis for the species that do not fit the screens.

As always, cumulative effects must be considered; cumulative effects findings may cause the project to go to standard consultation.

No Effect determinations are included in the species-specific flowcharts to assist in overall effect determinations even though consultation is not necessary.

Application of the screens and determination of project effects for compliance with Section 7 must be accomplished by a qualified wildlife biologist.

In no case does the programmatic concurrence apply to any project or action that has the potential to cause or increase the likelihood of take as defined by the Service's regulations.

In the event that a project or action proceeds under the programmatic concurrence and exceeds the conditions of the programmatic concurrence, the action agency must initiate informal or formal consultation or request reaffirmation of concurrence, as appropriate, for that project or action.

---

[1] Standard consultation refers to the process whereby the action agency biologist commences dialogue with U.S. Fish and Wildlife Service (Service) counterparts to determine the appropriate consultation procedures. Typically this involves phone correspondence to apprise the Service of the effects of an ongoing project and to reach consensus on such an effect and to determine if informal consultation is sufficient or if the project should proceed to formal consultation. Upon agreement of the respective consultation procedure, the action agency biologist will submit the appropriate request and documentation to the Service for concurrence or a biological opinion.

GRIZZLY BEAR PROJECT SCREENING ELEMENTS & DETERMINATIONS

Three considerations are prerequisite to more detailed consideration of other project information and are considered in screening process Part 1. (1) The area must be in compliance with the appropriate access management direction. (2) Human foods, livestock feed, garbage, and other attractants must be managed by the application of an adequate[2] "food storage rule" similar to the NCDE or Yellowstone food storage orders. If no specific rule exists for the area, use of either the Yellowstone or NCDE order will be considered adequate. (3) Projects that involve seeding or planting of grasses, forbs, or shrubs, must do so in a manner that will tend not to attract bears into areas where increased mortality risk or interaction between bears and people is likely.

After access management, food/attractant storage, and seeding/planting of grasses, forbs, or shrubs has been considered in Part 1, only then can other project details be considered in the Screening Criteria Table, Part 2. Table 2 represents a comprehensive activity list. There may be activities that are not included in this Table. For those activities not included and for which there is an effect, follow standard consultation procedures. Also, the Not Likely to Adversely Affect (NLAA) determinations reflects a conservative determination. There may be activities listed as NLAA in Table 2 that upon site-specific analyses warrant a No Effect determination.

Note: The scope of this programmatic biological assessment applies to areas where grizzly bears are expected to occur – not just within Recovery Zone boundaries.

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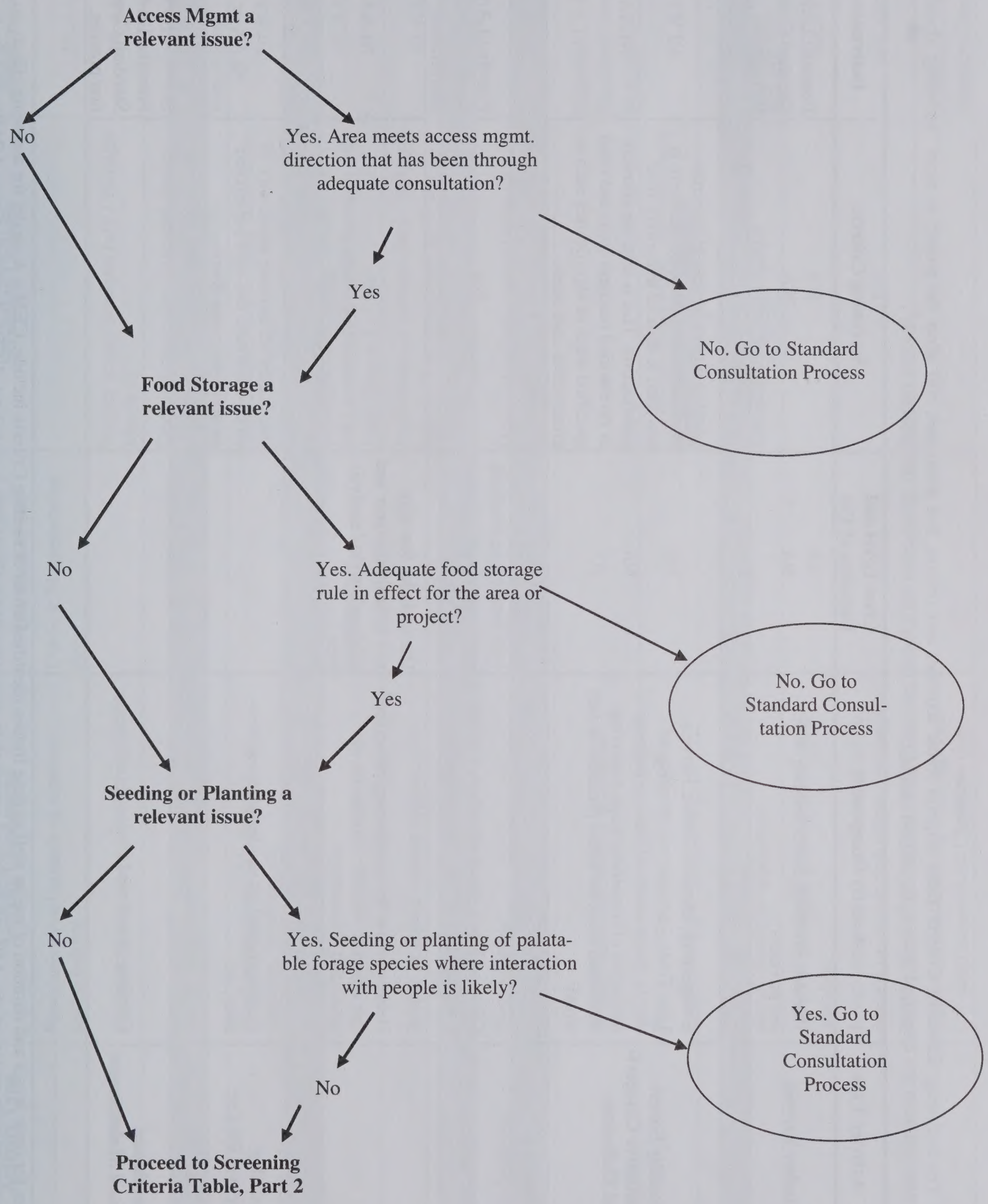
[2] Food shall be attended or stored in a bear resistant manner. For examples of applicable methods of bear resistant storage and definitions for 'attended' review the NCDE or Yellowstone food storage orders.

GRIZZLY BEAR SCREENING PROCESS PART 1


Access Mgmt a relevant issue?
No
Yes. Area meets access mgmt. direction that has been through adequate consultation?
Yes
No. Go to Standard Consultation Process
Food Storage a relevant issue?
No
Yes. Adequate food storage rule in effect for the area or project?
Yes
No. Go to Standard Consultation Process
Seeding or Planting a relevant issue?
No
Yes. Seeding or planting of palatable forage species where interaction with people is likely?
No
Yes. Go to Standard Consultation Process
Proceed to Screening Criteria Table, Part 2

Part 2: The following Screening Criteria Table displays forest activities and criteria, that when met, will allow the project to meet "screening elements". If the project does not meet the identified criteria, the project should proceed through the established consultation process[3].

#	Activity Type	Activity Component	Crew Level and Duration of Use	Screening Criteria	Determination
1	**Timber harvest**	Harvest, skidding, and/or hauling of timber products	NA	NA	Potential LAA, go to Standard Consultation process
2	**Healthy Forest Initiative Categorical Exclusions**	Category 12, Limited Timber Harvest: Live Trees – commercial thinning of overly dense stands of trees to improve the health of remaining trees; removing individual trees for forest products or fuel wood	NA	Limited timber harvest of live trees does not exceed 70 acres and there is less than ½ mile of temporary road construction. This is also not allowed in inventoried roadless areas and other specified areas of significance such as grizzly bear core areas.	NLAA
3	**Mechanical**	Off road heavy equip operation, such as site prep, fuel piling, log yarding, etc	NA	NA	Potential LAA, go to Standard Consultation process
		Helicopter use for monitoring, prescribed fire ignition, wildlife relocations, etc	Use includes few trips and ≤2 activities/year and ≤2 days/activity/ analysis area	NA	NLAA
4	**Existing Gravel Pit Use**	Existing gravel pit use for road maintenance, etc.		Use occurs off existing roads only. If on closed roads, use does not exceed administrative use levels	NLAA or NE
5	**Roads and Road Maintenance**	Opening closed road			Potential LAA, go to Standard Consultation process.

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[3] References for crew levels and duration of use as well as time frames identified under Screening Criteria include: CEM – A model for assessing effects on grizzly bears, 1990; Response to peer review of the A19 and proposed approach to managing access in grizzly bear habitat, NCDE Technical Group 1/24/01; and Draft, Rationale and choices made in the review and development of an access direction proposal for the NCDE grizzly bear ecosystem, 11/24/98.

#	Activity Type	Activity Component	Crew Level and Duration of Use	Screening Criteria	Determination
		Reclaiming road outside of riparian/ spring habitat	Use is ≤ 14 consecutive days		NLAA
		Reclaiming road in riparian/spring habitat		Project occurs between July 1 through March 31	NLAA
		Reclaiming road		Does not meet administrative use levels, or occurs in riparian/spring habitat and active during 4/1-6/30	Potential LAA, go to Standard Consultation process
		Road maintenance: blading, culvert cleaning, brushing, etc		Road is open, or use meets administrative use criteria	NLAA
		New road construction	Construction is ≤ 14 consecutive days	≤ ½ mile temporary road construction. If in riparian or spring habitat, new road construction occurs between July 1 and March 31	NLAA
		Bridge or stream culvert replacement		Project occurs between July 1 through March 31 or completed in ≤1 day	NLAA
6	**Silviculture Activities**	Reforestation hand planting	Day use only or camping of ≤20 individuals and ≤5 days/analysis area	Does not include snow plowing for access	NLAA
		Reforestation mechanical treatments	NA	NA	Potential LAA, go to Standard Consultation process.
		Insect suppression Aerial chemical application	NA	Chemicals do not effect cutworm moth and honeybee or their habitats	NLAA
		Insect suppression Aerial chemical application	NA	Chemicals affect cutworm moth or habitat, and in moth habitat	Potential LAA, go to Standard Consultation process
		Insect suppression ground chemical application	NA	NA	NLAA
		Insect suppression survey, fertilization, manual treatment, individual tree fire treatment, or pheromone treatment	NA	NA	NLAA
		Precommercial thinning and long term (>1 year) commercial Christmas tree			Potential LAA, go to Standard Consulta-

#	Activity Type	Activity Component	Crew Level and Duration of Use	Screening Criteria	Determination
		harvest			tion process
		Disease control – manual treatment of larch through girdling to control larch mistletoe	NA	NA	NLAA
7	**Range**	Infrastructure development	NA	NA	NLAA
		Grazing		Maintains or reduces existing livestock grazing or changes livestock class to a less vulnerable spp, and no history of depredation or control actions	NLAA
		Grazing		Increases livestock grazing, introduces new grazing into areas where depredation more likely, or history of livestock depredation	Potential LAA, go to Standard Consultation process
8	**Recreation**	Trail maintenance or reconstruction	NA	Results in increased use or change of user type	Potential LAA, go to Standard Consultation process
		Trail maintenance or reconstruction		Does not result in increase in use or change in user type	NLAA
		New Trail construction			Potential LAA, go to Standard Consultation process
		Facility operations, including developed and dispersed camping		Educate public campers and enforce sanitation standards. Does not increase use or change user type.	NLAA
				Sanitation standards are not enforced or use is increased or user type is changed.	Potential LAA, go to Standard Consultation process

#	Activity Type	Activity Component	Crew Level and Duration of Use	Screening Criteria	Determination
9	**Forest Products**	Personal use firewood collection, annual Christmas tree cutting, berry picking, low/incidental mushroom picking, and collection of “other forest products” (such as bear grass greens, medicinal herbs, pachistima, etc)		Does not include off road mechanical skidding or hauling. Include “bear aware” education message	NLAA
		Commercial firewood collection, berry picking, and “other forest products” (such as bear grass greens, medicinal herbs, pachistima, etc), but does not include mushrooms.	Day use only or camping of ≤20 individuals and ≤5 days total/analysis area	Does not include off road mechanical skidding or hauling. Enforce sanitation standards, and Include “bear aware” education message.	NLAA
10	**Habitat Restoration**	See timber harvest, mechanical treatments, roads, weed control, and prescribed fire. Also includes monitoring, fencing, fish barrier development, fish spp removal/trapping, rotenone treatment, interpretation/Con Ed, meadow restoration, riparian planting and restoration, snag creation, and water source development.	Day use only or camping of ≤20 individuals and ≤5 days/analysis area	Project occurs between July 1 through March 31 or completed in ≤1 day in riparian areas. Project does not result in an increase in public use or user type.	NLAA
11	**Prescribed Fire**	General support, ignition, mop-up	Day use only or camping of ≤20 individuals for ≤5 days/analysis area	Does not include riparian areas	NLAA
		Fire line construction	Same as support	Fire line does not/will not function as a road or trail and will be reclaimed after the fire.	NLAA
		Defensible space treatments (within 100m of structure) (Cohen 2000)	Same as support	Planting and/or seeding does not include palatable forage spp.	NLAA

#	Activity Type	Activity Component	Crew Level and Duration of Use	Screening Criteria	Determination
12	**Watershed Restoration**	Includes erosion control structures, sediment control, monitoring. Also, see reforestation, timber harvest, mechanical treatments, etc.	Day use only or camping of ≤20 individuals and ≤5 days/analysis area	Project occurs between July 1 through March 31 or completed in ≤1 day	NLAA
13	**Weed Management**	Chemical, aerial or ground application	NA	NA	NLAA
		Sheep or goat grazing	NA	NA	Potential LAA, go to Standard Consultation process
14	**Non-recreational Special Uses**	This includes maintenance of existing sites, corridors, or other facilities and is often carried out by the entity that owns the structures or facilities	NA	Meets administrative use levels	NLAA
		New construction of facilities – this includes microwaves, cell towers, substation communications, powerlines, etc.	NA	Construction of powerlines is ≤ ½ mile and includes vegetation clearing. Includes ≤ ½ mile of temporary road construction. Roads are not constructed in spring habitat between April 1 and June 30.	NLAA
15	**Miscellaneous**	Similar activity component, but must meet all screening criteria in parts 1 and 2 of the screens table and not violate any of these criteria.			NE or LNAA

LYNX PROJECT SCREENING ELEMENTS & DETERMINATIONS[4]

The lynx screen is a two-part process. Projects are initially screened through the Part 1 Flow Chart to determine whether they are carried forward into Part 2 or if standard consultation procedures need to be followed. Part 2 consists of two different tables, D1 and D2. Table D1 is composed of those activities described in the LCAS. Table D2 consists of projects that are not identified in the LCAS but that may be implemented as part of program of work and as such need to be analyzed for effects to listed species.

Table D2 is a based on the consultation that was completed when the lynx was listed in 2000 and through ongoing project analysis. As such, we retained the *"no effect"* determination in these screens as a general guideline for use by project biologists.

Applicable to both Tables, the *Not Likely to Adversely Affect* (NLAA) determinations reflect a conservative determination. There may be activities listed as NLAA that upon site specific analyses warrant a No Effect determination.

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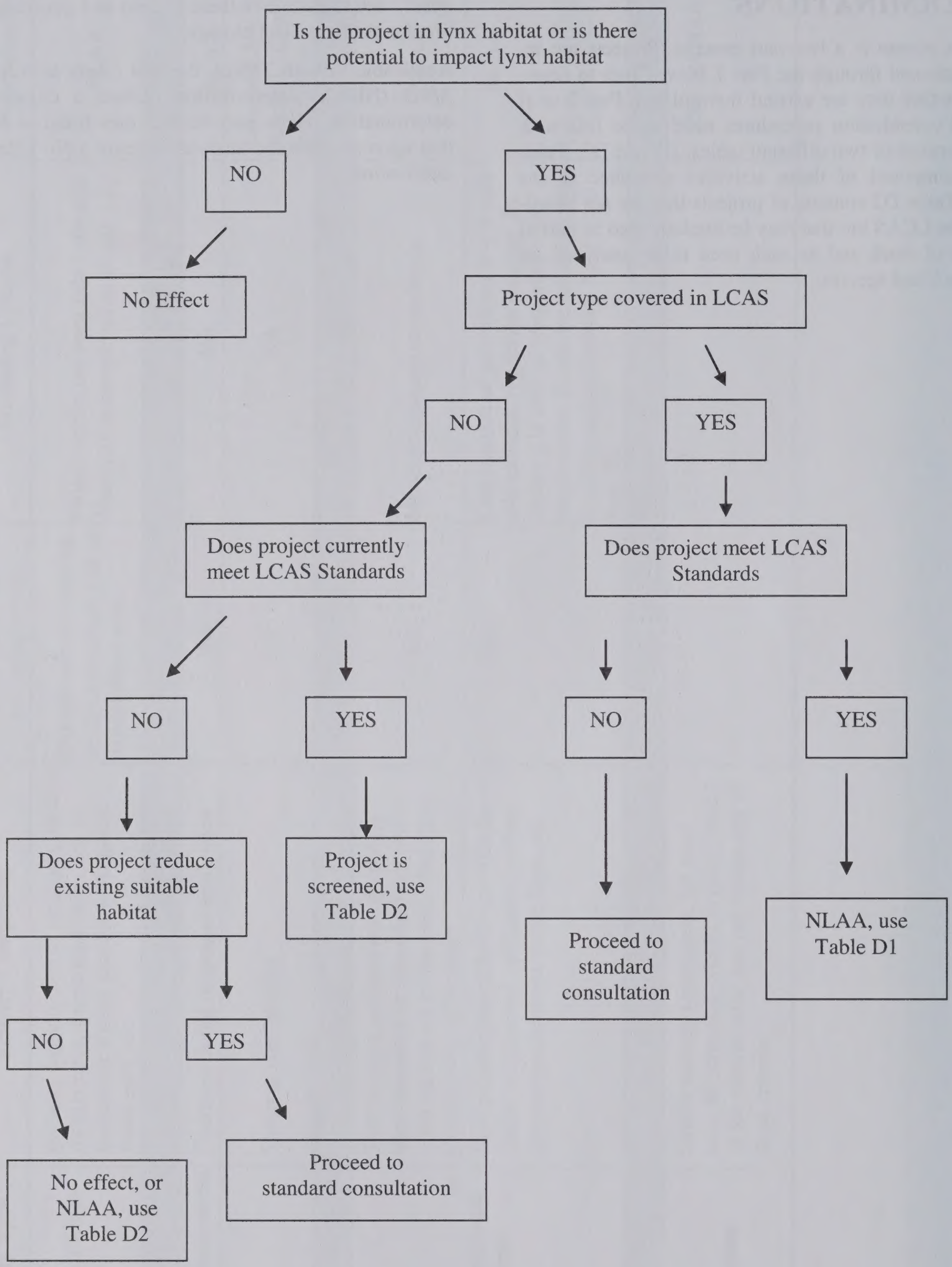
[4] Screening elements apply to projects that are in lynx habitat that are within a lynx analysis unit.

Refer to the Lynx Conservation Assessment and Strategy for a definition of lynx habitat

LYNX SCREENS

PART 1


Is the project in lynx habitat or is there potential to impact lynx habitat
NO
YES
No Effect
Project type covered in LCAS
NO
YES
Does project currently meet LCAS Standards
Does project meet LCAS Standards
NO
YES
NO
YES
Does project reduce existing suitable habitat
Project is screened, use Table D2
Proceed to standard consultation
NLAA, use Table D1
NO
YES
No effect, or NLAA, use Table D2
Proceed to standard consultation

LYNX SCREENS, PART 2 (Tables D1 and D2)

Table D1. Screening criteria for projects included in the Lynx Conservation and Assessment Strategy

#	Activity Type	Activity Component	Screening Criteria	Determination
1	**Timber Harvest (from LCAS)**	Felling, skidding, and/or hauling of timber products (not including salvage harvest). Includes post sale prescribed fire (slash, broadcast burning, etc.)	Management actions shall not change more than 15% of lynx habitat within a LAU to an unsuitable condition within a 10-year period; no more than 30% of lynx habitat within an LAU will be in unsuitable condition; greater than 10% denning habitat remains after the project; habitat connectivity is maintained	Proceed to standard consultation
	(From LCAS)	Salvage harvest (in this case, salvage harvest of blowdown)	Affected area is greater than or equal to 5 acres OR denning habitat has been field verified and comprises more than 10% of lynx habitat within an LAU and will be well-distributed after salvage harvest	Proceed to standard consultation
2	**Healthy Forest Initiative Categorical Exclusions or similar project meeting these and screening criteria in #1**	Category 12, Limited Timber Harvest: Live Trees – commercial thinning of overly dense stands of trees to improve the health of remaining trees; removing individual trees for forest products or fuelwood	Area does not exceed 70 acres and there is no more than ½ mile of temporary road construction (and meets screening criteria in #1 above)	NLAA
		Category 13, Salvage of Dead and Dying Trees – Salvage harvest in areas where trees have been severely damaged by forces such as fire, wind, ice, insects, or disease and still have some economic value	Area does not exceed 250 acres and there is no more than ½ mile of temporary road construction	NLAA
		Category 14, Tree Removal to Prevent Spread of Insect/Disease – Commercial and non-commercial felling and removal of any trees necessary to control the spread of insects and disease	Area does not exceed 250 acres and there is no more than ½ mile of temporary road construction	NLAA
3	**Roads and Road Maintenance**	Highways	Highway crossings are identified that reduce highway impacts on lynx. This screening element refers to actual projects that involve the creation of highway crossings to facilitate lynx movement.	Proceed to standard consultation

#	Activity Type	Activity Component	Screening Criteria	Determination
		Non-recreation motorized winter access	Over-snow access is restricted to designated routes	NLAA
4	**Silviculture Activities**	Precommercial thinning	Precommercial thinning occurs in stands that no longer provide snowshoe hare habitat	NLAA
5	**Range**	Livestock grazing in post-fire and post-harvest areas	Livestock use is delayed in these created openings until successful regeneration of the shrub and tree component occurs	NLAA
		Livestock grazing in aspen stands	Aspen stands are managed to ensure sprouting and survival sufficient to perpetuate long-term viability of the clones	NLAA
		Livestock grazing in shrub-steppe habitats	Shrub-steppe habitats are managed to maintain or achieve mid-seral or higher condition to provide lynx habitat matrix	NLAA
		Livestock grazing in riparian areas or willow carrs	Livestock grazing is managed to maintain or achieve mid-seral or higher condition to provide cover and forage for prey species	NLAA
6	**Recreation**	Snowmobiling and other over-the-snow activity such as cross country skiing, snowshoe races, and dogsledding	No net increase in groomed or designated over-the-snow routes for any winter activity and snowmobile play areas by LAU (see definition of 'designated' 5/19/2002 McAllister letter with Clarification and Revised Definitions, p.2)	NLAA
		Developed Recreation including planning and operating new or expanded recreation developments	Landscape connectivity is not compromised; trails, roads, and lift termini are designed to direct winter use away from diurnal security areas; key linkage areas are provided for landscape connectivity	NLAA
7	**Prescribed Fire**	All activity components	Burn prescriptions are designed to regenerate or create snowshoe hare habitat	NLAA

Table D2. Screening criteria for projects not included in the Lynx Conservation and Assessment Strategy

#	Activity Type	Activity Component	Screening Criteria		Determination
1	**Roads and Road Maintenance**	Road Maintenance - This includes general road maintenance that may involve the brushing of vegetation on the road or along roadsides. Road maintenance may include but is not limited to roadbed blading, brushing, cleaning ditches, replacing or cleaning culverts, cleaning dips, or spot graveling.	Brushing included		NLAA
			No brushing associated with activity		NE
		Road Decommissioning - This involves the use of heavy equipment and includes obliteration and other methods to hydrologically neutralize the road.			NLAA
		General Road Use - This includes hauling timber, removing mining waste and materials, and moving livestock over federal roads for which permits are required. It also includes routine road use by administrative units to carry out work associated with recreation, range, timber and minerals management, fire prevention and suppression, inventories, surveys, and other monitoring activities. This includes use of roads consistent with existing travel plans.	Activity includes right-of-ways, multiple dwelling construction, or development of large corporate lands		Proceed to Standard Consultation
			Activity occurs in winter and does NOT include right-of-ways, multiple dwelling construction, or development of large corporate lands		NLAA
			Activity occurs in spring, summer, or fall and does NOT include right-of-ways, multiple dwelling construction, or development of large corporate lands		NE
2	**Silvicultural Activities**	Tree planting	Tree planting does not result in stand type conversion. Activity does not involve snowplowing		NE
		Disease control – manual treatment of larch through girdling to control larch mistletoe	Activity does not involve snowplowing		NLAA
3	**Recreation**	Recreation Special Uses - This includes activities for which permits are issued and includes outfitting and permits issued to a variety of organizations that engage in activities such as mountaineering, rock climbing, outward bound, ski races, concerts, "Poker Runs", "Fun Runs", driving tours, nature watch hikes, hunting, fishing, and a wide variety of other events.	Activity is consistent with existing access management from Forest and Travel Plans and is consistent with the LCAS	Activity occurs in Spring, Summer, Fall	NE
				Activity involves hunting mountain lions with dogs	NLAA
				Activity occurs in winter	NLAA

#	Activity Type	Activity Component	Screening Criteria	Determination
		Trail Use consistent with existing travel management	Activity occurs in winter, meets LCAS	NLAA
			Activity occurs in spring, summer, or fall	NE
		Maintenance and/or Minor Trail Re-routes - This consists of maintenance of trails and minor trail re-routes and may require use of heavy equipment.	Activity does not involve blasting	NE
		New Trail Construction and/or Major Trail Re-routes and Maintenance - This includes the development of new trails used for foot, stock, or motorcycles and may require the use of heavy equipment or hand tools and may create a clearing width up to 10 feet wide (FSH 2309.18). This also includes major re-routing and may require use of heavy equipment and/or blasting.		NLAA
		Camping – Includes dispersed and developed campgrounds	Consistent with existing travel plans and LCAS and occurs during spring, summer, or fall	NE
		Dispersed off-road activities	Consistent with existing travel plans and LCAS	NLAA
		Permitted and Non-permitted use of Developed Sites, Facilities, and Their Maintenance - This includes special use permits issued for facilities, residences, and other structures. Permits are also issued for organizational camps such as the Boy Scouts and church groups at developed campgrounds. Other facilities include but are not limited to campgrounds, rental cabins, watchable wildlife sites, picnic areas, warming huts, and communication sites. Also includes Forest Service administrative sites and their maintenance (e.g. campgrounds, trailheads, ranger stations, etc.)	Activity occurs or is associated with ski areas	Proceed to Standard Consultation
			Activity occurs during the winter	NLAA
			Activity occurs during spring, summer, or fall	NE
4	**Forest Products**	Post and Pole Sales – This includes both commercial and non-commercial post and pole sales. This typically occurs in forested stands consisting of trees 5-9” diameter at breast height (dbh).	LCAS habitat criteria are met within the respective LAU (i.e. activity occurs in dense stands where low live limbs are generally out of reach for snowshoe hare).	NLAA

#	Activity Type	Activity Component	Screening Criteria	Determination
		Firewood Collection - This includes both commercial and non-commercial collection and involves the collection of standing dead or down wood.	LCAS habitat criteria are met within the respective LAU	NLAA
		Other Forest Products – This includes but is not limited to berry, mushroom, and bear grass collection and includes both commercial and non-commercial activities. Collection of tree products is not included.	LCAS habitat criteria are met within the respective LAU	NE
		Christmas Tree/Bough Cutting - This includes both commercial and non-commercial cutting. The trees cut range from 3” to 5” dbh and are less than 25’ tall.	LCAS habitat criteria are met within the respective LAU. Stand must not be converted to unsuitable snowshoe hare habitat. See Lynx Conservation Assessment and Strategy for a definition of ‘unsuitable’ habitat.	NLAA
5	**Habitat Restoration**	Forest and Shrub/Grassland Habitat Management - This includes aspen rejuvenation, shrub field maintenance and other types of ecosystem ‘driven’ projects designed to promote natural processes in an area.	LCAS habitat criteria are met within the respective LAU	NLAA
6	**Noxious Weed Management**	This includes chemical and biological treatments to noxious weeds within or adjacent to lynx habitat	Activity includes aerial application	NLAA
			Activity includes only ground application (no aerial application)	NE
7	**Other Special Uses**	This includes maintenance of existing sites, corridors, or other facilities and is often carried out by the entity that owns the structures or facilities. Maintenance may include vegetation blading or cutting, or spraying to reduce brush and reduce the invasion of shrubs and trees among other activities.		NLAA
8	**Mining and Gravel Pits**	Quarries, recreational mining, small mines, and reclamation of small mines	Mines and gravel pits <5 acres, no winter time operation	NLAA or NE

#	Activity Type	Activity Component	Screening Criteria	Determination
9	**Ditches and Diversions**			NE
10	**Surveys**	Surveys – This includes snow course surveys, track counts, habitat sampling, hair posts, remote camera stations, and radio telemetry among other methods.	Operations are during winter and include repeated snow compaction activities(cross country ski trips, snowmobile trips) on ungroomed trails generally not being used by public	NLAA
			Operations are during spring, summer, or fall	NE
11	**Miscellaneous**	Similar activity component, but must meet all screening criteria in parts 1 and 2 of the screens table and not violate any of these criteria		NE or LNAA

CONSULTATION SUMMARY SHEET FOR PROGRAMMATIC ASSESSMENT

CONSULTATION SUMMARY SHEET *INSTRUCTIONS* FOR PROGRAMMATIC BIOLOGICAL ASSESSMENT

Summary sheets will be filled out by Project Biologists and reviewed by Forest Biologists. Project Biologists will submit summary sheets to Forest Biologists on a project-by-project basis. Forest Biologists will submit summary sheets, with one project per sheet, to the U.S. Fish and Wildlife Service quarterly and, as needed, these projects will be reviewed and discussed by the Level One Team to ensure the screening criteria are adequately interpreted and applied. There will be a random audit of a few projects each year to insure compliance and effectiveness of the screens and reporting requirements.

Page ___ of ___

Administrative Unit: ______________________________

Contact: ______***Project Biologist***______________________________

Reviewed by: ______________***Forest Biologist***______________________________

Date: ______________________________

Project Name and Description	Species	Effects of Action	Cumulative Effects (ESA)	How does the project meet screening criteria?	Determination of Effects
Project description should provide pertinent information including all aspects of the project that potentially affect T&E species. This includes but is not limited to: project name, project location including management unit if applicable, timing of implementation and details of project activities.	**Grizzly Bear**	Briefly describe the overall effect for the entire project on the species and base it on the screening criteria.	Briefly describe the effects of future, non-federal actions that are reasonably likely to occur in the action area (this is the area where the effects of the project may be felt).	Specifically identify the screening criteria and describe how the project meets these specific criteria.	• No Effect • May affect not likely to adversely affect
	Canada Lynx				

CONSULTATION SUMMARY SHEET FOR PROGRAMMATIC BIOLOGICAL ASSESSMENT

Page ___ of ___

Administrative Unit: ______________________________

Contact: ______________________________

Reviewed by: ______________________________

Date: ______________________________

Project Name and Description	Species	Effects of Action	Cumulative Effects (ESA)	How does the project meet screening criteria?	Determination of Effects
	Grizzly Bear				
	Lynx				

LYNX CONSERVATION ASSESSMENT AND STRATEGY (LCAS) SUMMARY AND LYNX CONSERVATION MEASURES

The BLM and FWS signed a Conservation Agreement to promote the conservation of the Canada lynx and its habitat on BLM lands, using the Lynx Science Report and the Lynx Conservation and Assessment Strategy. The LCAS was developed in place of the normal recovery plan previously used for most other species listed under ESA.

The agreement and strategy identify objectives, standards, guidelines, and conservation measures to reduce or eliminate risk factors. These measures are intended to conserve the lynx, and to reduce or eliminate adverse effects from the spectrum of management activities on federal lands. These measures are provided to assist federal agencies in seeking opportunities to benefit lynx and to help avoid negative impacts through the thoughtful planning of activities. Plans that incorporate them, and projects that implement them, are generally not expected to have adverse effects on lynx, and implementation of these measures across the range of the lynx is expected to lead to conservation of the species.

Critical habitat for the Canada Lynx was not designated through the listing process. The LCAS instead relies on defining potential habitat based on vegetation characteristics and prey availability wherever that may occur since current lynx populations are small and widely dispersed. Conservation focus is to:

- Manage forested habitat within the historic range of variability for vegetation, and maintain large unfragmented blocks of forest with the appropriate structure;
- Maintain dense understory conditions providing cover and forage for snowshoe hares as the primary lynx prey base;
- Minimize snow compaction that would encourage access for competing predators into lynx habitat; and
- Provide connections within and between lynx habitat areas, emphasizing riparian habitats.

CONSERVATION MEASURES APPLICABLE TO ALL PROGRAMS AND ACTIVITIES

Because it is impossible to provide standards and guidelines to address all possible actions in all locations across the broad range of the lynx, it is imperative that project specific analysis and design be completed for all actions that have the potential to affect lynx. Circumstances unique to individual projects or actions and their locations may still result in adverse effects on lynx. In these cases, additional or modified mitigating measures may be necessary to avoid or minimize adverse effects.

Programmatic Planning - Objectives

Design vegetation management strategies that are consistent with historical succession and disturbance regimes. The broad-scale strategy should be based on a comparison of historical and current ecological processes and landscape patterns, such as age-class distributions and patch size characteristics. It may be necessary to moderate the timing, intensity, and extent of treatments to maintain all required habitat components in lynx habitat, to reduce human influences on mortality risk and interspecific competition, and to be responsive to current social and ecological constraints relevant to lynx habitat.

Programmatic Planning - Standards

1. Conservation measures will generally apply only to lynx habitat on federal lands within LAUs.

2. To facilitate project planning, delineate LAUs. To allow for assessment of the potential effects of the project on an individual lynx, LAUs should be at least the size of area used by a resident lynx and contain sufficient year-round habitat.

3. To be effective for the intended purposes of planning and monitoring, LAU boundaries will not be adjusted for individual projects, but must remain constant.

4. Lynx habitat will be mapped using criteria appropriate to each geographic area.

5. Prepare a broad-scale assessment of landscape patterns that compares historical and current ecological processes and vegetation patterns, such as age-class distributions and patch size characteristics. In the absence of guidance developed from such an assessment, limit disturbance within each LAU as follows: if more than 30 percent of lynx habitat within a LAU is currently in unsuitable condition, no further reduction of suitable conditions shall occur as a result of vegetation management activities by federal agencies.

Programmatic Planning - Guidelines

1. The size of LAUs should generally be 6,500- 10,000 ha (16,000 – 25,000 acres or 25-50 square miles) in contiguous habitat, and likely should be larger in less contiguous, poorer quality, or naturally fragmented habitat. Larger units should be identified in the southern portions of the Northern Rocky Mountains Geographic Area (in Idaho from the Salmon River south, Oregon, Wyoming, and Utah) and in the Southern Rocky Mountains Geographic Area.

In the west, we recommend using watersheds (e.g., 6th code hydrologic unit codes (HUCs) in more northerly portions of geographic areas, and 5th code HUCs in more southerly portions). In the east, terrestrial ecological units that have been delineated at the land type association or subsection level (e.g., LTAs or whatever scale most closely approximates the size of a lynx home range) may be an appropriate context for analysis. Coordinate delineation of LAUs with adjacent administrative units and state wildlife management agencies, where appropriate.

2. After LAUs are identified, their spatial arrangement should be evaluated. Determine the number and arrangement of contiguous LAUs needed to maintain lynx habitat well distributed across the planning area. LAUs with only insignificant amounts of lynx habitat may be discarded, or portions of the unit combined with or divided among neighboring LAUs to provide a meaningful unit for analysis.

Project Planning - Standards

1. Within each LAU, map lynx habitat. Identify potential denning habitat and foraging habitat (primarily snowshoe hare habitat, but also habitat for important alternate prey such as red squirrels), and topographic features that may be important for lynx movement (primary ridge systems, prominent saddles, and riparian corridors). Also identify non-forest vegetation (meadows, shrub-grassland communities, etc.) adjacent to and intermixed with forested lynx habitat that may provide habitat for alternate lynx prey species.

2. Within a LAU, maintain denning habitat in patches generally larger than 5 acres, on at least 10 percent of the area that is capable of producing stands with these characteristics. Where less than 10 percent of the forested lynx habitat within a LAU provides denning habitat, defer those management actions that would delay achievement of denning habitat structure.

3. Maintain habitat connectivity within and between LAUs.

CONSERVATION MEASURES TO ADDRESS RISK FACTORS AFFECTING LYNX PRODUCTIVITY

TIMBER MANAGEMENT IN LYNX HABITAT

Timber management modifies the vegetation structure and mosaic of forested landscapes. Timber management can be used in conjunction with, or in place of, fire as a disturbance process to create and maintain snowshoe hare habitat. In the southern portion of its range, lynx populations appear to be limited by the availability of snowshoe hare prey, as suggested by large home range sizes, high kitten mortality due to starvation, and greater reliance on alternate prey, especially red squirrels, as compared with populations in northern Canada. Timber management practices should be designed to maintain or enhance habitat for snowshoe hare and alternate prey such as red squirrel. Dense horizontal cover of conifers, just above the snow level in winter, is critical for snowshoe hare habitat. This structure may occur either in regenerating seedling/sapling stands, or as an understory layer in older stands.

Most aspen stands in the Rocky Mountains are in late successional condition as a result of past fire prevention and grazing. In aspen stands intermixed with spruce-fir forests, particularly in southern Idaho, southern Montana, Wyoming, Utah, and Colorado, treatments that result in dense regeneration of aspen are likely to enhance habitat for potential prey of lynx.

Programmatic Planning - Objectives

1. Evaluate historical conditions and landscape patterns to determine historical vegetation mosaics across landscapes through time. For example, large infrequent disturbance events may have been more characteristic of lynx habitat than small frequent disturbances.

2. Maintain suitable acres and juxtaposition of lynx habitat through time. Design vegetation treatments to approximate historical landscape patterns and disturbance processes.

3. If the landscape has been fragmented by past management activities that reduced the quality of lynx habitat, adjust management practices to produce forest composition, structure, and patterns more similar to those that would have occurred under historical disturbance regimes.

Project Planning - Objectives

1. Design regeneration harvest, planting, and thinning to develop characteristics suitable for snowshoe hare habitat.

2. Design project to retain/enhance existing habitat conditions for important alternate prey (particularly red squirrel).

Project Planning - Standards

1. Management actions (e.g., timber sales, salvage sales) shall not change more than 15 percent of lynx habitat within a LAU to an unsuitable condition within a 10-year period.

2. Following a disturbance such as blowdown, fire, insects, and disease that could contribute to lynx denning habitat, do not salvage harvest when the affected area is smaller than 5 acres; exceptions would include areas such as developed campgrounds. Where larger areas are affected, retain a minimum of 10% of the affected area per LAU in patches of at least 5 acres to provide future denning habitat. In such areas, defer or modify management activities that would prevent development or maintenance of lynx foraging habitat.

3. In lynx habitat, pre-commercial thinning will be allowed only when stands no longer provide snowshoe hare habitat (e.g., self-pruning processes have eliminated snowshoe hare cover and forage availability during winter conditions with average snowpack).

4. In aspen stands within lynx habitat in the Cascade Mountains, Northern Rocky Mountains and Southern Rocky Mountains Geographic Areas, apply harvest prescriptions that favor regeneration of aspen.

Project Planning - Guidelines

1. Plan regeneration harvests in lynx habitat where little or no habitat for snowshoe hares is currently available, to recruit a high density of conifers, hardwoods, and shrubs preferred by hares. Consider the following:
    a) Design regeneration prescriptions to mimic historical fire (or other natural disturbance) events, including retention of fire-killed dead trees and coarse woody debris;
    b) Design harvest units to mimic the pattern and scale of natural disturbances and retain natural connectivity across the landscape. Evaluate the potential of riparian zones, ridges, and saddles to provide connectivity; and
    c) Provide for continuing availability of foraging habitat in proximity to denning habitat.

2. In areas where recruitment of additional denning habitat is desired, or to extend the production of snowshoe hare foraging habitat where forage quality and quantity is declining due to plant succession, consider improvement harvests (commercial thinning, selection, etc). Improvement harvests should be designed to:
    a) Retain and recruit the understory of small diameter conifers and shrubs preferred by hares;
    b) Retain and recruit coarse woody debris, consistent with the likely availability of such material under natural disturbance regimes; and
    c) Maintain or improve the juxtaposition of denning and foraging habitat.

WILDLAND FIRE MANAGEMENT

Wildland fire and insects have historically played the dominant role in maintaining a mosaic of forest successional stages in lynx habitat. Stand-replacing fires were infrequent and affected large areas. In areas with a mixed fire regime, moderate to low intensity fires also occurred in the intervals between stand-replacing events. Refer to the geographic area descriptions for more detailed information regarding historical fire regimes.

Periodic vegetation disturbances maintain the snowshoe hare prey base for lynx. In the period immediately following large stand-replacing fires, snowshoe hare and lynx densities are low. Populations increase as the vegetation grows back and provides dense horizontal cover, until the vegetation grows out of the reach of hares. Low to moderate intensity fires may also stimulate understory development in older stands.

Fire exclusion may have altered the pattern and composition of vegetation in subalpine forests. In the western United States, particularly in the southern portion of the Northern Rocky Mountains Geographic Area and in the Southern Rocky Mountains Geographic Area, fire exclusion is one of the primary factors contributing to the decline or loss of aspen. Aspen communities occupy a small percentage of the total forested area, but they provide important habitat diversity. Aspen/tall forb community types, especially those that include snowberry, serviceberry and chokecherry shrubs in the understory, are very productive and may contribute to the quality of lynx foraging habitat.

Wildland fire management activities include suppression and pre-suppression activities, as well as prescribed fire (natural and management ignitions).

Programmatic Planning - Objectives

1. Restore fire as an ecological process. Evaluate whether fire suppression, forest type conversions, and other forest management practices have altered fire regimes and the functioning of ecosystems.

2. Revise or develop fire management plans to integrate lynx habitat management objectives. Prepare plans for areas large enough to encompass large historical fire events.

3. Use fire to move toward landscape patterns consistent with historical succession and disturbance regimes. Consider use of mechanical pre-treatment and management ignitions if needed to restore fire as an ecological process.

4. Adjust management practices where needed to produce forest composition, structure, and patterns more similar to those that would have occurred under historical succession and disturbance regimes.

5. Design vegetation and fire management activities to retain or restore denning habitat on landscape settings with highest probability of escaping stand-replacing fire events. Evaluate current distribution, amount, and arrangement of lynx habitat in relation to fire disturbance patterns.

Project Planning - Objectives

1. Use fire as a tool to maintain or restore lynx habitat.

2. When managing wildland fire, minimize creation of permanent travel ways that could facilitate increased access by competitors.

Project Planning - Standards

1. In the event of a large wildfire, conduct a post-disturbance assessment prior to salvage harvest, particularly in stands that were formerly in late successional stages, to evaluate potential for lynx denning and foraging habitat.

2. Design burn prescriptions to regenerate or create snowshoe hare habitat (e.g., regeneration of aspen and lodgepole pine).

Project Planning - Guidelines

1. Design burn prescriptions to promote response by shrub and tree species that are favored by snowshoe hare.

2. Design burn prescriptions to retain or encourage tree species composition and structure that will provide habitat for red squirrels or other alternate prey species.

3. Consider the need for pre-treatment of fuels before conducting management ignitions.

4. Avoid constructing permanent firebreaks on ridges or saddles in lynx habitat.

5. Minimize construction of temporary roads and machine fire lines to the extent possible during fire suppression activities.

6. Design burn prescriptions and, where feasible, conduct fire suppression actions in a manner that maintains adequate lynx denning habitat (10% of lynx habitat per LAU).

RECREATION MANAGEMENT

Lynx have evolved a competitive advantage in environments with deep soft snow that tends to exclude other predators during the middle of winter, a time when prey is most limiting (Murray and Boutin 1991, Livaitis 1992, Buskirk et al. 1999). Widespread human activity (snowshoeing, cross-country skiing, snowmobiling, snow cats) may lead to patterns of snow compaction that make it possible for competing predators such as coyotes and bobcats to occupy lynx habitat through the winter, reducing its value to and even possibly excluding lynx (Bider 1962, Ozoga and Harger 1966, Murray et al. 1995, O'Donoghue et al. 1998). In order to maintain a competitive advantage for lynx, it may be necessary to minimize or even preclude snow compacting activities in and around quality snowshoe hare habitat. To not do so may lead to the elimination of lynx, or preclude the ability to re-establish them, in these landscapes.

A consideration for lynx in winter landscapes is exploitation or interference competition from other predator/competitors (Buskirk et al. 1999) and human disturbance (e.g., large developed recreational sites or areas of concentrated winter recreational use). Lynx may be able to adapt to the presence of regular and concentrated recreational use, so long as critical habitat needs are being met. Therefore it is essential that an interconnected network of foraging habitat be maintained that is not subjected to widespread human intervention or competition from other predator species.

In areas of concentrated recreational use (e.g., large ski areas), it may be necessary to maintain or provide "diurnal security habitat". In landscapes where there is widespread or intense recreational use, the natural diurnal patterns of human and lynx activity may provide the opportunity to maintain both uses in the landscape. Most human activity occurs during daylight hours, while lynx appear to be most active dusk to dawn, although weather may affect the time period when lynx are most active (Apps 1999). A key to providing temporal segregation of use may be in ensuring there are places in that landscape were lynx can bed during the day relatively undisturbed. Sites that are similar to denning habitat (i.e., areas that are tangled with large woody debris) will tend to exclude most human activity because of the inherent difficulty they pose for human movement. Diurnal security habitat should be sufficiently large to provide effective and visual insulation from human activity, and must be well distributed and in proximity to foraging habitat.

Where such diurnal security sites exist, they should be protected from actions or activities that would destroy or compromise their functional value. In landscapes where these areas are lacking or inadequate, it may be desirable to create them, focusing on location, adequate size, and an abundance of jackstrawed large woody debris.

Landscape connectivity may be provided by narrow forested mountain ridges, plateaus, or forest stringers that link more extensive areas of lynx habitat. Woodland riparian communities that provide travel cover across otherwise open areas may also provide connectivity.

Minimizing disturbance around denning habitat is important from May to August.

Programmatic Planning - Objectives

1. Plan for and manage recreational activities to protect the integrity of lynx habitat, considering as a minimum the following:
    a) Minimize snow compaction in lynx habitat.
    b) Concentrate recreational activities within existing developed areas, rather than developing new recreational areas in lynx habitat.
    c) On federal lands, ensure that development or expansion of developed recreation sites or ski areas and adjacent lands address landscape connectivity and lynx habitat needs.

Programmatic Planning - Standards

1. On federal lands in lynx habitat, allow no net increase in groomed or designated over-the-snow routes and snowmobile play areas by LAU. This is intended to apply to dispersed recreation, rather than existing ski areas.
2. Map and monitor the location and intensity of snow compacting activities (for example, snowmobiling, snowshoeing, cross-country skiing, dog sledding, etc.) that coincide with lynx habitat, to facilitate future evaluation of effects on lynx as information becomes available.

Programmatic Planning - Guidelines

1. Provide a landscape with interconnected blocks of foraging habitat where snowmobile, cross-country skiing, snowshoeing, or other snow compacting activities are minimized or discouraged.
2. As information becomes available on the impact of snow-compacting activities and disturbance on lynx, limit or discourage this use in areas where it is shown to compromise lynx habitat. Such actions should be undertaken on a priority basis considering habitat function and importance.

Project Planning - Standards

Developed Recreation:

1. In lynx habitat, ensure that federal actions do not degrade or compromise landscape connectivity when planning and operating new or expanded recreation developments.
2. Design trails, roads, and lift termini to direct winter use away from diurnal security habitat.

Dispersed Recreation:

To protect the integrity of lynx habitat, evaluate (as new information becomes available) and amend as needed, winter recreational special use permits (outside of permitted ski areas) that promote snow compacting activities in lynx habitat.

Project Planning - Guidelines

Developed Recreation:

1. Identify and protect potential security habitats in and around proposed developments or expansions.
2. When designing ski area expansions, provide adequately sized coniferous inter-trail islands, including the retention of coarse woody material, to maintain snowshoe hare habitat.
3. Evaluate, and adjust as necessary, ski operations in expanded or newly developed areas to provide nocturnal foraging opportunities for lynx in a manner consistent with operational needs, especially in landscapes where lynx habitat occurs as narrow bands of coniferous forest across the mountain slopes.

FOREST/BACKCOUNTRY ROADS AND TRAILS

Forest and backcountry roads and trails are those that occur on public lands; highways are addressed separately. Refer also to the conservation measures in the Forest Management, Recreation, and Trapping sections.

Plowed roads and groomed over-the-snow routes may allow competing carnivores such as coyotes and mountain lions to access lynx habitat in the winter, increasing competition for prey (Buskirk et al. 1999). However, plowed or created snow roads may be necessary to accomplish winter logging, which may be desirable to meet a variety of resource management objectives.

Preliminary information suggests that lynx may not avoid roads, except at high traffic volumes. Therefore, at this time, there is no compelling evidence to recommend management of road density to conserve lynx. However, new road construction continues to occur in many watersheds within lynx habitat, many of which are already highly roaded, and the effects on lynx are largely unknown. Further research directed at elucidating the effects of road density on lynx is needed.

Programmatic Planning - Objectives

Maintain the natural competitive advantage of lynx in deep snow conditions.

Programmatic Planning - Standards

On federal lands in lynx habitat, allow no net increase in groomed or designated over-the-snow routes and snowmobile play areas by LAU. Winter logging activity is not subject to this restriction.

Programmatic Planning - Guidelines

1. Determine where high total road densities (>2 miles per square mile) coincide with lynx habitat, and prioritize roads for seasonal restrictions or reclamation in those areas.

2. Minimize roadside brushing in order to provide snowshoe hare habitat.

3. Locate trails and roads away from forested stringers.

4. Limit public use on temporary roads constructed for timber sales. Design new roads, especially the entrance, for effective closure upon completion of sale activities.

5. Minimize building of roads directly on ridgetops or areas identified as important for lynx habitat connectivity.

LIVESTOCK GRAZING

In riparian areas within lynx habitat, ungulate forage use levels may reduce forage resources available to snowshoe hares. Browsing or grazing can have a direct effect on snowshoe hare habitat if it alters the structure or composition of native plant communities.

Throughout the Rocky Mountains, grazing has been a factor in the decline or loss of aspen as a seral species in subalpine forests. Young, densely regenerating aspen stands with a well-developed understory provide good quality habitat for snowshoe hares and other potential lynx prey species, such as grouse. Grazing should be managed to allow for regeneration of aspen clones.

Particularly in the naturally fragmented habitats of the western United States, inclusions of high elevation shrub-steppe habitats often may exist within the home range of a lynx. Resident lynx are also known to occasionally make exploratory movements out of their home ranges (Squires and Laurion 1999, Aubry et al. 1999), encountering these habitats and potential alternate prey such as ground squirrels and jackrabbits. Therefore, shrub-steppe habitats within the elevational ranges of forested lynx habitat should be considered lynx habitat and be managed to maintain or achieve mid-seral or higher conditions, thereby providing maximum natural cover and prey availability. Those areas that are currently in late seral condition should not be degraded.

Programmatic Planning - Objectives

In lynx habitat and adjacent shrub-steppe habitats, manage grazing to maintain the composition and structure of native plant communities.

Project Planning - Objectives

1. Manage livestock grazing within riparian areas and willow carrs in lynx habitat to provide conditions for lynx and lynx prey.

2. Maintain or move towards native composition and structure of herbaceous and shrub plant communities.

3. Ensure that ungulate grazing does not impede the development of snowshoe hare habitat in natural or created openings within lynx habitat.

Project Planning - Standards

1. Do not allow livestock use in openings created by fire or timber harvest that would delay successful regeneration of the shrub and tree components. Delay livestock use in post-fire and post-harvest created openings until successful regeneration of the shrub and tree components occurs.

2. Manage grazing in aspen stands to ensure sprouting and sprout survival sufficient to perpetuate the long-term viability of the clones.

3. Within the elevational ranges that encompass forested lynx habitat, shrub-steppe habitats should be considered as integral to the lynx habitat matrix and should be managed to maintain or achieve mid seral or higher condition.

4. Within lynx habitat, manage livestock grazing in riparian areas and willow carrs to maintain or achieve mid seral or higher condition to provide cover and forage for prey species.

OTHER HUMAN DEVELOPMENTS: OIL AND GAS LEASING, MINES, RESERVOIRS, AGRICULTURE

Most of these activities affect lynx habitat by changing or eliminating native vegetation, and may also contribute to fragmentation. The primary effects of leases and mines on lynx are probably related to the potential for plowed roads to provide access for lynx competitors, particularly coyotes. Construction of reservoirs will be handled under normal FERC and consultation procedures, and no conservation measures were developed specific to those projects.

Programmatic Planning - Objectives

Design developments to minimize impacts on lynx habitat.

Programmatic Planning - Guidelines

Map oil and gas production and transmission facilities, mining activities and facilities, dams, and agricultural lands on public lands and adjacent private lands, in order to assess cumulative effects.

Project Planning - Standards

On projects where over-snow access is required, restrict use to designated routes.

Project Planning - Guidelines

1. If activities are proposed in lynx habitat, develop stipulations for limitations on the timing of activities and surface use and occupancy at the leasing stage.
2. Minimize snow compaction when authorizing and monitoring developments. Encourage remote monitoring of sites that are located in lynx habitat, so that they do not have to be visited daily.
3. Develop a reclamation plan (e.g., road reclamation and vegetation rehabilitation) for abandoned well sites and closed mines to restore suitable habitat for lynx.
4. Close newly constructed roads (built to access mines or leases) in lynx habitat to public access during project activities. Upon project completion, reclaim or obliterate these roads.

CONSERVATION MEASURES TO ADDRESS MORTALITY RISK FACTORS

TRAPPING (LEGAL AND NON-TARGET)

Lynx are known to be very vulnerable to trapping. Ward and Krebs (1985) stated that trapping was the single most important mortality factor in their Yukon study area. Incidental trapping of lynx can occur in areas where regulated trapping of other species overlaps with lynx habitat (Mech 1973, Carbyn and Patriquin 1983, Squires and Laurion 1999). Lynx may be more vulnerable to trapping near open roads (Koehler and Aubry 1994, Bailey et al. 1986).

The U.S. Fish and Wildlife Service (FWS) is proposing to work with the States to develop a 4-d. rule for all regulated or unregulated trapping (e.g., coyote, wolverine, bobcat, fox) in lynx habitats by establishing adequate trapping protocols to minimize incidental take. Each state would work with FWS to customize the protocol for their specific regions.

Programmatic Planning - Objectives

Reduce incidental harm or capture of lynx during regulated and unregulated trapping activity, and ensure retention of an adequate prey base.

Programmatic Planning - Guidelines

Federal agencies should work cooperatively with States and Tribes to reduce incidental take of lynx related to trapping.

PREDATOR CONTROL

Predator control activities conducted on federal lands by Wildlife Services include trapping, shooting, and poisoning animals on domestic livestock allotments, occasionally within lynx habitat. Similar efforts may be conducted on adjacent private lands. Although such actions are intended to target the offending animal, non-target animals including lynx may be impacted.

Programmatic Planning - Objectives

Reduce incidental harm or capture of lynx during predator control activities, and ensure retention of adequate prey base.

Programmatic Planning - Standards

Predator control activities, including trapping or poisoning on domestic livestock allotments on federal lands within lynx habitat, will be conducted by Wildlife Services personnel in accordance with FWS recommendations established through a formal Section 7 consultation process.

SHOOTING

Lynx may be mistakenly shot by legal predator hunters seeking bobcats, or illegally by poachers. Prey species, such as snowshoe hares and ground squirrels, may also be affected by legal shooting.

Programmatic planning - Objectives

Reduce lynx mortalities related to mistaken identification or illegal shooting.

Programmatic Planning - Guidelines

1. Initiate interagency information and education efforts throughout the range of lynx in the contiguous states. Utilize trailhead posters, magazine articles, news releases, state hunting and trapping regulation booklets, etc., to inform the public of the possible presence of lynx, field identification, and their status.
2. Federal agencies should work cooperatively with States and Tribes to ensure that important lynx prey are conserved.

COMPETITION AND PREDATION AS INFLUENCED BY HUMAN ACTIVITIES

Habitat changes that benefit competitor/ predator species, including some vegetation management practices and providing packed snow travel ways, may lead to increased starvation or direct mortality of lynx. Refer also to applicable conservation measures in the Forest Management, Recreation, and Forest/ Backcountry Roads and Trails sections.

Programmatic Planning - Objectives

Maintain the natural competitive advantage of lynx in deep snow conditions.

Programmatic Planning - Standards

1. On federal lands in lynx habitat, allow no net increase in groomed or designated over-the-snow routes and snowmobile play areas by LAU. This is intended to apply to dispersed recreation, rather than existing ski areas.

HIGHWAYS

Direct mortality from vehicular collisions may be detrimental to lynx populations in the lower 48 states. Mortality levels can drastically increase with relatively small increases in traffic volumes and speed.

Programmatic Planning - Objectives

Reduce the potential for lynx mortality related to highways.

Programmatic Planning - Standards

Within lynx habitat, identify key linkage areas and potential highway crossing areas.

Programmatic Planning - Guidelines

Where needed, develop measures such as wildlife fencing and associated underpasses or overpasses to reduce mortality risk.

CONSERVATION MEASURES TO ADDRESS MOVEMENT AND DISPERSAL

It is essential to provide landscape connectivity so that all or most habitat has the potential of being occupied, and populations remain connected.

At the southern periphery and eastern portions of lynx range, habitat occurs in narrow fragmented bands (man-made or naturally-occurring), or has been fragmented by human developments. Connected forested habitats allow lynx, and other large and medium size carnivores, to easily move long distances in search of food, cover, and mates. Highways and private lands that are subdivided for commercial or residential developments or have high human use patterns can interrupt existing habitat connectivity and further fragment lynx habitat, reducing the potential for population interchange. In some areas, particularly the eastern United States, habitat connectivity may be difficult to achieve because of mixed ownerships. Land exchanges and cooperative management with private landowners may be the only options available to provide landscape connectivity.

Shrub-steppe habitats provide connectivity between mountain ranges and other blocks of primary forested lynx habitat. Where blocks of lynx habitat are separated by intervening basins, valleys, or high mesas of shrub-steppe, land managers should evaluate those shrub-steppe expanses for potential to provide landscape connectivity. Vegetative or geomorphic features within shrub-steppe habitats that may be particularly important are riparian systems and relatively high ridge systems. Where such features exist, land management practices should be consistent with maintaining landscape connectivity. Livestock grazing within shrub-steppe habitats in such areas should be managed to maintain or achieve mid seral or higher condition, to maximize cover and prey availability. Such areas that are currently in late seral condition should not be degraded.

Programmatic Planning - Objectives

Maintain and, where necessary and feasible, restore habitat connectivity across forested landscapes.

Programmatic Planning - Standards

1. Identify key linkage areas that may be important in providing landscape connectivity within and between geographic areas, across all ownerships.

2. Develop and implement a plan to protect key linkage areas on federal lands from activities that would create barriers to movement. Barriers could result from an accumulation of incremental projects, as opposed to any one project.

3. Evaluate the potential importance of shrub-steppe habitats in providing landscape connectivity between blocks of primary lynx habitat. Livestock grazing within shrub-steppe habitats in such areas should be managed to maintain or achieve mid seral or higher condition, to maximize cover and prey availability. Such areas that are currently in late seral condition should not be degraded.

Programmatic Planning - Guidelines

Where feasible, maintain or enhance native plant communities and patterns, and habitat for potential lynx prey, within identified key linkage areas. Pursue opportunities for cooperative management with other landowners.

HIGHWAYS

Highways impact lynx and other carnivores by fragmenting habitat and impeding movements. As traffic lanes, volume, speeds, and right-of-way width increase, the effects on lynx and other carnivores are magnified. As human demographics change, highways tend to increase in size and traffic density. Special concern must be given to the development of new highways (gravel roads being paved), and changes in highway design, such as additions in the number of traffic lanes, widening of rights-of-way, or other modifications to increase highway capacity or speed.

Within key linkage areas, highway crossing structures should be employed to reduce effects on wildlife. Information from Canada (Trans-Canada Highway) suggests crossings should generally be at ½-mile intervals and not farther than 1 mile apart, depending on topographic and vegetation features.

Programmatic Planning - Objectives

Ensure that connectivity is maintained across highway rights-of-way.

Programmatic Planning - Standards

1. Federal land management agencies will work cooperatively with the Federal Highway Administration and State Departments of Transportation to address the following within lynx geographic areas:
    a) Identify land corridors necessary to maintain connectivity of lynx habitat.
    b) Map the location of "key linkage areas" where highway crossings may be needed to provide habitat connectivity and reduce mortality of lynx (and other wildlife).

Programmatic Planning - Guidelines

Evaluate whether land ownership and management practices are compatible with maintaining lynx highway crossings in key linkage areas. On public lands, management practices will be compatible with providing habitat connectivity. On private lands, agencies will strive to work with landowners to develop conservation easements, exchanges, or other solutions.

Project Planning - Standards

1. Identify, map, and prioritize site-specific locations, using topographic and vegetation features, to determine where highway crossings are needed to reduce highway impacts on lynx.
2. Within the range of lynx, complete a biological assessment for all proposed highway projects on federal lands. A land management agency biologist will review and coordinate with highway departments on development of the biological assessment.

Project Planning - Guidelines

Dirt and gravel roads traversing lynx habitat (particularly those that could become highways) should not be paved or otherwise upgraded (e.g., straightening of curves, widening of roadway, etc.) in a manner that is likely to lead to significant increases in traffic volumes, traffic speeds, increased width of the cleared ROW, or would foreseeably contribute to development or increases in human activity in lynx habitat. Such projects may increase habitat fragmentation, create a barrier to movements, increase mortality risks due to vehicle collisions, and generate secondary adverse effects by inducing, facilitating, or exacerbating development and human activity in lynx habitat. Whenever rural dirt and gravel roads traversing lynx habitat are proposed for such upgrades, a thorough analysis should be conducted on the potential direct and indirect effects to lynx and lynx habitat.

LAND OWNERSHIP

Lynx exemplify the need for landscape-level ecosystem management. Contiguous tracts of land in public ownership (national forests, national parks, wildlife refuges, and BLM lands) provide an opportunity for management that can maintain lynx habitat connectivity. Throughout most of the lynx range in the lower 48 states, connectivity with habitats and populations in Canada is critical for maintaining populations in the U.S.

Programmatic Planning - Objectives

Retain lands in key linkage areas in public ownership.

Programmatic Planning - Standards

Identify key linkage areas by management jurisdiction(s) in management plans and prescriptions.

Programmatic Planning - Guidelines

In land adjustment programs, identify key linkage areas. Work towards unified management direction via habitat conservation plans, conservation easements or agreements, and land acquisition.

Project Planning - Standards

1. Develop and implement specific management prescriptions to protect/ enhance key linkage areas.
2. Evaluate proposed land exchanges, land sales, and special use permits for effects on key linkage areas.

SKI AREAS/LARGE RESORTS AND ASSOCIATED ACTIVITIES

Ski areas and large resorts are often developed in and across bands of high elevation boreal forests containing lynx habitat. Landscape location, the high intensity of recreational and operational use, and associated development pose a risk to lynx movement and dispersal. Developments that may impede lynx movement occur in Utah and western Wyoming (Northern Rocky Mountains

Geographic Area), Colorado (Southern Rocky Mountains Geographic Area), and possibly portions of the Northeast Geographic Area.

Programmatic Planning - Objectives

When conducting landscape level planning on Federal lands, allocate land uses such that landscape connectivity is maintained.

Programmatic Planning - Standards

Within identified key linkage areas, provide for landscape connectivity.

Project Planning - Standards

When planning new or expanding recreational developments, ensure that key linkage areas are protected.

Project Planning - Guidelines

Plan recreational development, and manage recreational and operational uses to provide for lynx movement and to maintain effectiveness of lynx habitat.

This information has been excerpted from the Canada Lynx Conservation Assessment and Strategy. The entire assessment and strategy, along with the amendment proposed for the Northern Rockies can found on the U.S. Fish and Wildlife Service website at:

http://www.fs.fed/r1/planning/lynx/reports/lcas.pdf

United States Department of the Interior
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M.02 - BLM January 22, 2008

MEMORANDUM

To: Field Manager, Bureau of Land Management, Butte, MT

From: Montana Field Supervisor, Helena, MT R. Mark Wilson

Subject: Transmittal of biological opinion for the revised Butte Resource Management Plan

This memo transmits the U.S. Fish and Wildlife Service's (Service) biological opinion for effects to grizzly bears based on our review of the Butte Resource Management Plan (RMP) in western Montana. This also conveys our concurrence with your determinations for the effects of the RMP on gray wolves (*Canis lupus*), Canada lynx (*Lynx Canadensis*), bull trout (*Salvelinus confluentus*), and Ute ladies' tresses (*Spiranthes diluvialis*). The transmitted biological opinion was prepared in response to the Service's June 6, 2007 receipt of your Biological Assessment (BA) requesting concurrence and initiation of formal section 7 consultation under the Endangered Species Act.

The transmitted document represents the Service's biological opinion on the effects of the RMP on grizzly bears in accordance with section 7 of the Endangered Species Act of 1973, as amended, (16 U.S.C. 1531 et seq.). The Service has examined the RMP in accordance with the section 7 Interagency Cooperation Regulations (50 CFR 402, 51 FR 19957-19963). The biological opinion refers only to potential effects on grizzly bears and not the overall environmental acceptability of the proposed project. A complete administrative record of this consultation is on file at our Sub-office in Billings, Montana.

Based on our review of the BA and accompanying material, we concur with your determination that the proposed action is likely to adversely affect the threatened grizzly bear. The Service also concurs with your determination that the action is not likely to adversely affect the gray wolf, Canada lynx, bull trout, and Ute ladies' tresses. This concurrence is based on your BA as well as the RMP environmental impact statement. In addition, you made a "no effect" determination for the black-footed ferret and a no jeopardy call for the experimental/nonessential population of the gray wolf. When BLM makes a no effect determination (or no jeopardy for experimental/non-essential populations), concurrence from the Service is not required, although we do appreciate inclusion of the information for our records. In the BA you also made effects determinations for the bald eagle (*Haliaeetus leucocephalus*) and arctic grayling (*Thymalus arcticus*). Bald eagles and arctic grayling were subsequently removed from Threatened and Candidate status in 2007 and consultation is no longer required for those species.

If you have further questions about this letter or your responsibilities under the Endangered Species Act, please contact me or Anne Vandehey of my staff at 406-449-5225.

ENDANGERED SPECIES ACT SECTION 7 CONSULTATION

BIOLOGICAL OPINION
ON THE
EFFECTS OF THE BUTTE BUREAU OF LAND MANAGEMENT
RESOURCE MANAGEMENT PLAN ON
GRIZZLY BEARS

Agency:	U.S. Department of Interior Bureau of Land Management Butte Field Office Butte, Montana
Consultation Conducted by:	U.S. Fish and Wildlife Service Montana Field Office Helena, Montana
Date Issued:	

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I. INTRODUCTION

In this biological opinion, the U.S. Fish and Wildlife Service (Service) analyzed effects of the implementation of the Butte Resource Management Plan (RMP) on grizzly bears (*Ursus arctos horribilis*) that occur on lands and mineral estate administered by the Butte Bureau of Land Management (BLM) Field Office in western Montana. Formal consultation was initiated on June 6, 2007, when the Service received the biological assessment (BLM, 2007) for this project.

Section 7(b)(3)(A) of the Endangered Species Act of 1973, as amended (Act) requires that the Secretary of Interior issue biological opinions on federal agency actions that may affect listed species or critical habitat. Biological opinions determine if the action proposed by the action agency is likely to jeopardize the continued existence of listed species or destroy or adversely modify critical habitat. Section 7(b)(3)(A) of the Act also requires the Secretary to suggest reasonable and prudent alternatives to any action that is found likely to result in jeopardy or adverse modification of critical habitat, if any has been designated. This biological opinion addresses only impacts to federally listed species and does not address the overall environmental acceptability of the proposed action.

Consultation History

In 2005 the Service began discussions with the Butte RMP Interdisciplinary Team about changes in grizzly bear habitat and range since the adoption of previous land use planning documents. In meetings and phone conversations it was relayed to BLM personnel that grizzly bears have expanded their range over the past decades and occur outside the Northern Continental Divide Ecosystem Recovery Zone (NCDE or recovery zone). Grizzly bear occurrence and reports of occurrence outside the recovery zone boundary have been increasing over time, throughout the ecosystem. A team of biologists and grizzly bear experts from the Interagency Grizzly Bear Study Team, Forest Service, Montana Fish, Wildlife and Parks, and Service produced a grizzly bear distribution map displaying where grizzly bears could reasonably be expected to occur (U.S. Forest Service, 2002a). The current distribution of grizzly bears overlaps lands administered by the BLM under the proposed Butte RMP. All of these lands are outside of grizzly bear recovery zones established by the Service and so are deemed not necessary for recovery of the species. Interagency teams including representatives from the Service, Forest Service, and the BLM discussed issues related to the increasing frequency of grizzly bear occurrence outside of designated recovery zones over the past few years (U.S. Forest Service unpublished meeting agendas and notes, 2001-2004).

As a result of these discussions, the BLM concluded that the management actions proposed in the RMP were, in rare circumstances, likely to adversely affect grizzly bears as they occur outside the Northern Continental Divide Ecosystem (NCDE) Recovery Zone. Therefore, the BLM requested programmatic consultation on the effects of implementation of the Butte RMP on grizzly bears.

II. DESCRIPTION OF THE PROPOSED ACTION

The action is the implementation of the Butte RMP and includes lands with BLM surface and/or mineral ownership in seven counties in southwest Montana. Of these, only BLM lands and minerals in Lewis and Clark County include areas where grizzly bears may occur outside the NCDE Recovery Zone. The action area includes areas of the Field Office within the distribution of grizzly bears (U.S. Forest Service, 2002a). The BLM's biological assessment identified two program areas that are likely to adversely affect grizzly bears: access management and livestock grazing. This biological opinion focuses on the effects of RMP direction related to access management, food storage, and livestock grazing on grizzly bears occurring on the RMP area outside of the NCDE recovery zone.

At the time the Headwaters RMP was written, grizzly bears were unknown on BLM lands in the action area. The Headwaters RMP (BLM, 1984) provides goals, objectives, and standards as part of the proposed action for the management of wildlife, however, there is little reference to grizzly bears in the plan and no goals, standards, and guidelines to minimize adverse effects to grizzly bears.

III. STATUS OF THE SPECIES /CRITICAL HABITAT DESCRIPTION

Species/Critical Habitat Description

Grizzly bears are among the largest terrestrial mammals in North America. South of the United States - Canada border, adult females range from 250-350 pounds and adult males range from 400 to 600 pounds. Grizzly bears are relatively long-lived, living 25 years or longer in the wild. Grizzly bears are omnivorous, opportunistic feeders that require foods rich in protein or carbohydrates in excess of maintenance requirements in order to survive seasonal pre-and post-denning requirements. Grizzly bears are homeo-hypothermic hibernators, meaning their body temperature drops no more than five degrees C during winter when deep snow, low food availability, and low ambient air temperatures appear to make winter sleep essential to grizzly bears' survival (Craighead and Craighead, 1972a, 1972b). Grizzly bears excavate dens and require environments well covered with a blanket of snow for up to five months, generally beginning in fall (September-November) and extending until spring (March-April) (Craighead and Craighead, 1972b; Pearson, 1972).

Listing History

The grizzly bear was listed as a threatened species under the Act in the lower 48 states on July 28, 1975 (40 FR 31736). The Service identified the following as factors establishing the need to list: (1) present or threatened destruction, modification, or curtailment of habitat or range; (2) overutilization for commercial, sporting, scientific, or educational purposes; and (3) other manmade factors affecting its continued existence. The two primary challenges in grizzly bear conservation are the reduction of human-caused mortality and the conservation of remaining habitat (U.S. Fish and Wildlife Service, 1993).

The grizzly bear recovery plan (Recovery Plan) was completed on January 1982 and was revised in 1993 (U.S. Fish and Wildlife Service, 1993). The 1993 revised Recovery Plan delineated grizzly bear recovery zones in 6 mountainous ecosystems in the U.S. The Recovery Plan details recovery objectives and strategies for the grizzly bear recovery zones in the ecosystems where grizzly bear populations still persist. These recovery zones are the Northern Continental Divide (NCDE), Yellowstone Grizzly Bear (YGBE), Cabinet-Yaak (CYE), and Selkirk (SE) Ecosystems. Grizzly bears in the YGBE have recovered and were de-listed by the Service in 2007. The Recovery Plan also includes recovery strategies for the North Cascades ecosystem in Washington, where only a very few grizzly bears are believed to remain, and for the Selway-Bitterroot ecosystem of Idaho and Montana, where suitable grizzly bear habitat still occurs.

Life History

Grizzly bears are large animals with great metabolic demands requiring extensive home ranges. The search for energy-rich food appears to be a driving force in grizzly bear behavior, habitat selection, and intra/inter-specific interactions. Grizzly bears historically used a wide variety of habitats across North America, from open to forested, temperate through alpine and arctic habitats, once occurring as far south as Mexico. They are highly dependent upon learned food locations within their home ranges. Adequate nutritional quality and quantity are important factors for successful reproduction. Diverse structural stages that support wide varieties of nourishing plants and animals are necessary for meeting the high-energy demands of these large animals. Grizzly bears follow phenological vegetative, tuber or fruit development, seek out concentrated food sources including carrion, live prey (fish, mammals, insects), and are easily attracted to human food sources including gardens, grain, compost, bird seed, livestock, hunter gut piles, bait and garbage. Bears that lose their natural fear and avoidance of humans, usually as a result of food rewards, become habituated and may become food-conditioned. Grizzly bears will defend food and have been known to charge when surprised. As a result of real or perceived threats to human safety or property, both habituation and food conditioning increase chances of human-caused grizzly bear mortality. Nuisance grizzly bear mortalities can be a result of legal management actions, defense of human life or illegal killing.

Adult grizzly bears are normally solitary, except females with cubs or during short breeding relationships. They will tolerate other grizzly bears at closer distances when food sources are concentrated and siblings may associate for several years following weaning (Jonkel and Cowan, 1971; Craighead, 1976; Egbert and Stokes, 1976; Glenn et al., 1976; Herrero, 1978). Across their range, home range sizes vary from about 50 square miles or more for females to a few hundred square miles for males. Overlap of home ranges is common. Grizzly bears may have one of the lowest reproductive rates among terrestrial mammals, resulting primarily from the late age at first reproduction, small average litter size and the long interval between litters. Mating occurs from late May through mid-July. Females in estrus will accept more than one adult male (Hornocker, 1962), and can produce cubs from different fathers the same year (Craighead et al., 1995). Age of first reproduction and litter size may be nutritionally related (Herrero, 1978; Russell et al., 1978). Average age at first reproduction in the lower 48 states for females is 5.5 years and litter size ranges from one to four cubs that stay with the mother up to two years. Males may reach physiological reproductive age at 4.5 years, but may not be behaviorally reproductive due to other dominant males preventing mating.

Habitat fragmentation is significant for large carnivores requiring wide vegetative and topographic habitat diversity (Servheen, 1986). Loss and fragmentation of habitat is particularly relevant to the survival of grizzly bears. Large expanses of unfragmented habitat are important for feeding, breeding, sheltering, traveling, and other essential behavioral patterns. Grizzly bears occur at low densities, have low reproductive rates, exhibit individualistic behavior, and are largely dependent on riparian habitats also used extensively by people; thus, grizzly bear populations are susceptible to human influences. Grizzly bears may avoid key habitats due to human generated disturbances, or become habituated and food conditioned, which may ultimately lead to the animal being destroyed. Historically, as human settlements, developments, and roads increased in grizzly bear habitat, grizzly bear populations became fragmented. As fragmented population segments become smaller and/or isolated, they are more vulnerable to extinction, especially when human-caused mortality pressures continue. Linkage zones are rather recent concepts in broad management direction for grizzly bears and other wide-ranging species (Servheen and Sandstrom, 1993). Linkage zones, or zones of habitat connectivity within or between populations of animals, foster the genetic and demographic health of the species. Bader (2000) displays potential secure areas that are spatially distributed within known male and female grizzly bear dispersal distances and he believes that the available information shows that effective linkages are possible for grizzly bear use and these linkage areas would increase persistence probabilities.

Natural mortality is known to occur from intra-specific predation, but the degree this occurs in natural populations is not known. Parasites and disease do not appear to be a significant cause of natural mortality (Jonkel and Cowan, 1971; Kistchinskii, 1972; Mundy and Flook, 1973; Rogers and Rogers, 1976). As animals highly dependent upon learned knowledge of their habitat, displacement into unknown territory (such as subadult dispersal) may lead to suboptimal nutrition, reduced reproduction, or greater exposure to adult predatory bears or human food sources (which can lead to human-caused mortality). Starvation and loss in dens during food shortages have been surmised, but have not been documented as a major mortality factor. Natural mortality in rare, relatively secretive animals such as grizzlies can be extremely difficult to document or quantify.

Human-caused mortality has been slightly better quantified, but recent models speculate that reported mortality may only 50 percent of actual mortality (McLellan et al., 1999). Between 1800 and 1975, grizzly populations in the lower 48 states declined drastically. Fur trapping, mining, ranching, and farming pushed westward, altered habitat and resulted in the direct killing of grizzly bears. Historically, grizzly bears were targeted in predator control programs in the 1930's. Predator control was probably responsible for extirpation in many states that no longer support grizzlies. More recent human-caused mortality in Montana includes legal hunting (canceled in 1991), management control actions, defense of life, vehicle and train collisions, defense of property, mistaken identity by black bear or other big game hunters, poaching and malicious killing. Grizzly bears normally avoid people, possibly as a result of many generations of bear sport hunting and human-caused mortality. Displacement away from human activities has been documented to reduce fitness of grizzly bears, affecting survival in some instances. Avoidance of roads can lead grizzly bears to either avoid essential habitat along roads, or could put them at greater risk of exposure to human-caused mortality if they do not avoid roads.

Status and Distribution

The grizzly bear originally inhabited a variety of habitats from the Great Plains to the mountains of western North America, from central Mexico to the Arctic Ocean. With the advent of Euroamerican colonization in the early nineteenth century, grizzly bear numbers were reduced from over 50,000 to less than 1,000 in North America south of the Canadian border. Today, the grizzly bear occupies less than two percent of its former range south of Canada (U.S. Fish and Wildlife Service, 1993). In the conterminous 48 States, only five remaining areas have either remnant or self-perpetuating populations. These remaining populations are principally located in mountainous regions in Washington, Idaho, Wyoming, and Montana and are often associated with National Parks and wilderness areas.

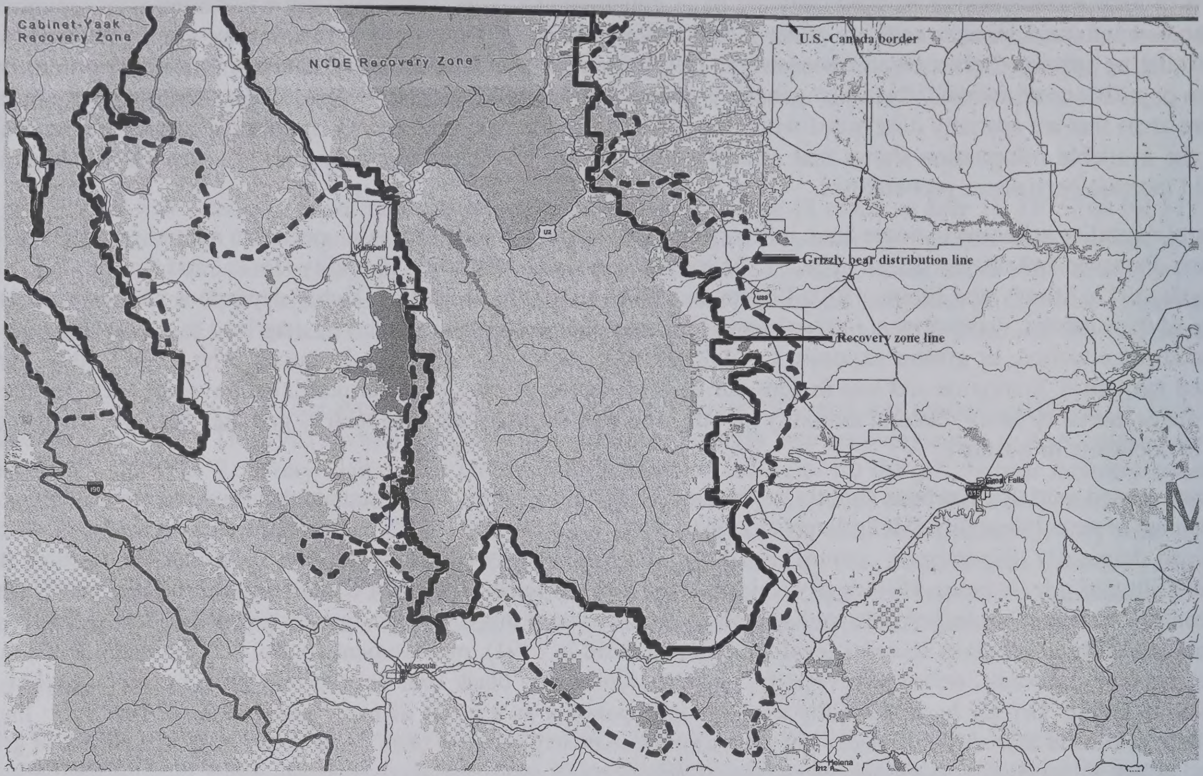
Status of grizzly bears in the NCDE

The NCDE extends from the Rocky Mountains of northern Montana into contiguous areas in Alberta and British Columbia, Canada. The U.S. portion of the NCDE which makes up the NCDE recovery zone (U.S. Fish and Wildlife Service 1993) encompasses over 9,600 square miles and includes parts of five National Forests (Flathead, Kootenai, Helena, Lewis and Clark, and Lolo), four wilderness areas (Bob Marshall, Mission Mountains, Great Bear, and Scapegoat), and one wilderness study area (Deep Creek North) (Figure 1). National Forest System lands encompass 63 percent of the NCDE recovery zone. Additionally, the NCDE recovery zone includes Glacier National Park (GNP), the Flathead Indian Reservation (Salish-Kootenai tribal land), the Blackfeet Indian Reservation, adjacent private and State lands, and lands managed by the Bureau of Land Management.

The NCDE grizzly bear recovery zone is subdivided into smaller units to facilitate both the assessment of projects and recovery objectives. Twenty-three bear management units (BMU) were formally delineated throughout the NCDE. BMU were designed to:

- Assess the effects of existing and proposed activities on grizzly bear habitat without having the effects diluted by consideration of too large an area;
- Address unique habitat characteristics and grizzly bear activity and use patterns;
- Identify contiguous complexes of habitat which meet year-long needs of the grizzly bear; and
- Establish priorities for areas where land use management needs would require cumulative effects assessments.

Figure 1. NCDE (solid line) and grizzly bear distribution area (dashed line) (U.S. Forest Service 2002a).



The exact size of the grizzly bear population in the NCDE is not known. The nature of the species and the rugged terrain it inhabits makes complete population census difficult, if not impossible. Population parameters more readily monitored are used as an alternative index to population size. The Recovery Plan identified unduplicated females with cubs as one surrogate index for estimating a minimum number of grizzly bears within a recovery zone. The Recovery Plan does not rely entirely on this minimum population estimate to assess the status of grizzly bear populations. The Recovery Plan incorporates a number of measurable parameters to assess population status, including the number of females with cubs, the distribution of family groups, and the relationship between the minimum population estimate and known, human-caused grizzly bear mortality.

The Recovery Plan defines a recovered grizzly bear population as one that can sustain the existing level of known and unknown human-caused mortality that exists in the ecosystem and that is well distributed throughout the recovery zone. Demographic recovery criteria outlined for the NCDE recovery zone include:

- Observation of 22 females with cubs of the year (unduplicated sightings), 10 in Glacier National Park and 12 outside the park, over a 6-year average both inside the recovery area and within a 10 mile area immediately surrounding the recovery zone, excluding Canada;
- Twenty-one of the 23 BMUs occupied by females with young from a running 6-year sum of verified observations, and with no two adjacent BMUs unoccupied;
- Known, human-caused mortality not to exceed 4 percent of the current population estimate (based on most recent 3-year average of females with young);
- No more than 30 percent of the known, human-caused mortality shall be females;
- The mortality limits cannot be exceeded in more than 2 consecutive years for recovery to be achieved; and
- Recovery in the NCDE cannot be achieved without occupancy of the Mission Mountains portion of the NCDE.

Mortality of grizzly bears within a 10-mile area outside the recovery zone boundary is counted towards recovery zone statistics. This is a conservative accounting for grizzly bears making their range primarily in the recovery zone, but it includes bears whose range overlaps the recovery zone line.

In the NCDE, results from monitoring grizzly bears during 1987 through 1996 indicate the Recovery Plan criteria for several population recovery parameters were met, including numbers of females with cubs; numbers of BMUs with family groups; occupancy requirements for BMUs; and total human-caused grizzly bear mortality. Calendar year 2001 was the first year that annual total mortality (6-year average) and annual female mortality (6-year average) were both exceeded (U.S. Fish and Wildlife Service, 2006a). In 2002 and 2003, 15 and 16 grizzly bear mortalities occurred, respectively. During these years three population parameters did not meet demographic recovery criteria: females with cubs inside Glacier National Park (6-year average), annual mortality (6-year average), and annual female mortality (6-year average) (Ibid.). Data for 2004 indicate an increase in overall grizzly bear mortality within the NCDE recovery zone over the past 4 years (U.S. Fish and Wildlife Service 2006a). In 2004, there were 34 grizzly bear mortalities, including 21 females. Four population parameters did not meet demographic recovery criteria (table 1).

Table 1. 2004 Status of the NCDE in Relation to the Demographic Recovery Criteria (U.S. Fish and Wildlife Service 2006a).

Population Parameter	Target Number	2004 Number
Females w/cubs (6 yr average)	22	21.8 (131/6)
Inside GNP (6 yr average)	10	9.1 (55/6)
Outside GNP (6 yr average)	12	15 (76/6)
Mortality limit as 4% of min. est.	Less than 12	20.0 (6 yr. avg.) *
Female mortality limit as 30% of total	Less than 3.6	9.0 (6 yr avg.) *
Distribution of females w/young	21 of 23 with Missions occupied	23 of 23; Missions are occupied

* Exceeds mortality limits

The Recovery Plan requires limits on human-caused grizzly bear mortality as one of the criteria for recovery and delisting. The limits on total and female mortality account for unknown, unreported mortality. Although the Service is concerned with the recent number of grizzly bear mortalities in the NCDE recovery zone, the mortality limits in the Recovery Plan are clearly conservative. Currently, the mathematics used to calculate sustainable mortality limits depend on field counts of females and cubs. An established protocol for this count does not exist, and counting effort varies considerably among years. The NCDE is heavily forested and visual sightings of females with cubs are not easily obtained. Mace and Waller studied grizzly bears in a small portion of the NCDE from 1987 to 1997. Even this intense observation effort yielded variable counts from year to year. The observation variability is also reflected in years not included in the study (U.S. Fish and Wildlife Service, 2006a).

The purpose of counting females with cubs is to estimate a known minimum number of adult females to demonstrate sufficient reproduction to offset existing levels of mortality (U.S. Fish and Wildlife Service 1993). Years during which the effort to count female grizzly bears is poor or conditions are unfavorable may yield very conservative counts of females with cubs. These conservative counts result in a conservative minimum population estimate, which results in conservative human-caused mortality limits. Due to the varying effort and success in counting females with cubs, neither these annual number of females with cubs counted or the human-caused mortality limits/annual tally can be used to estimate trend (U.S. Fish and Wildlife Service, 1993).

The conservative nature of the human-caused mortality estimates were intentional, as the Recovery Plan attempted to incorporate limits that clearly measured recovery of the population. The methodology used in the Recovery Plan (Knight et al., 1988, 1993 *in* U.S. Fish and Wildlife, 1993) and observations of unduplicated females with cubs from 2002 through 2004 (U.S. Fish and Wildlife Service, 2006a) results in an estimated minimum number of grizzly bears in the NCDE in 2004 of 304 bears.

Current levels of human-caused mortality may be above that sustainable by the population, if the number of grizzly bears in the NCDE is near the minimum estimate. However, current levels may be sustainable by the population if the number of grizzly bears is in fact higher than the minimum. The Service acknowledges that females with cubs are typically poorly counted in the NCDE recovery zone. Reliable estimates of total population versus a minimum population estimate would allow significant insights into assessing the current status of NCDE grizzly bear population.

It is expected that reliable NCDE grizzly bear population estimates will be available within the next year (Kendall, 2004a, b). The U.S. Geological Survey (USGS) DNA-based mark-recapture study in the greater Glacier area collected information from 1998 through 2000 and the data are being analyzed. Final population estimates for this northern one-third of the ecosystem are expected in the fall of 2005 (K. Kendall, USGS, pers. comm., 2005). A preliminary estimate of grizzly bear numbers from the greater Glacier study was previously reported, but the data are undergoing further analysis and a conclusion is not available at this time (K. Kendall, U.S. Geological Survey, pers. comm., 2005). A more extensive DNA-based study is underway in the entire NCDE recovery zone and grizzly bear population estimates from this study could be available as early as the end of 2007. With 81 percent of the samples analyzed thus far, at least 545 known individual grizzly bears have been identified from samples obtained in the NCDE during 2004 (K. Kendall, USGS, pers. comm., 2007). With 20 percent of the sample yet to be analyzed, the number of known individuals will likely increase. At this time however, even the minimum of 545 grizzly bears for 2004 illustrates the conservative nature of the recovery plan minimum population estimate of 304 grizzly bears in 2004.

We lack precise grizzly bear trend information in the NCDE. During 1987 to 1996, research in the Swan Mountains indicated a tenuous finite rate of increase of 0.977 for grizzly bears in the study area related to high female mortality (Mace and Waller, 1998). However, the authors concluded the study area population was stable, or experiencing an "exceedingly" slow population decline. The authors concluded the population was probably stable based on multiple lines of evidence, including vital rates, density, and occupancy of grizzly bears in the multiple-use zone (Forest Service lands). It is important to note that annual mortality rates for bears utilizing roaded rural (private lands and adjacent roaded areas) and wilderness areas was 21 and 15 times higher, respectively, than for bears using only multiple-use lands (Ibid.). Mortalities in the wilderness areas resulted from "mistaken identity" during the black bear hunting season and human defense of life. In rural areas, mortalities resulted from malicious killing and the management removal of habituated or food-conditioned bears (Ibid.). Recent data (U.S. Fish and Wildlife Service 2006b) indicate that the majority of human-caused mortalities in the NCDE continue to be management removal of nuisance or habituated grizzly bears and illegal killings. The majority of these mortalities occur on roaded, rural areas and not on roaded multiple-use Forest Service lands away from private sites. The Service classified roaded rural as private and public land within 1 mile of a developed private site. This differs slightly from Mace and Waller's classification of roaded rural as private only. Both classifications demonstrate the higher incidence of grizzly bear mortality associated with areas in proximity to private lands and associated development.

For many reasons, extrapolation of the rate of increase of grizzly bears in the Swan Mountains study area to the entire NCDE recovery zone population is not reasonable. Grizzly bears living in the South Fork area (including the Swan Mountains) are semi-isolated from other portions of the ecosystem, particularly females (Mace and Waller, 1998). The study area was geographically situated between Hungry Horse Reservoir to the east and private lands to the west and south with extensive human development and activity in some areas. Grizzly bears face increased mortality risks due to their proximity to these highly developed lands. According to the authors, these areas of private lands acted as mortality "sinks" for study area bears, and accounted for a great deal of the mortality incurred by study animals. The study area from which the grizzly bear sample was obtained was small (about 360,000 acres) in comparison to the NCDE (over 5,700,000 acres). The NCDE encompasses many diverse habitats such as Glacier National Park with nearly 1,000,000 acres of highest quality habitat, few if any permanent human residences, no public use of firearms, and strict food storage enforcement. Over 1.7 million acres of wilderness (essentially roadless lands) are included in the NCDE along with the Rocky Mountain Front (comprised of drier habitat types east of the Continental Divide, bounded by ranches and relatively low human population), the Swan Valley (high quality habitat but highly populated with people, high road densities, and a public/private checkerboard land ownership pattern), and the North Fork (comprised of very high quality habitat and fewer human residents, bounded by Glacier National Park to the west). It is not known whether similar patterns of grizzly bear population growth, density, or natural and human-caused mortality rates occur across this ecosystem, based on the South Fork Study.

Grizzly bears in the Flathead drainage of British Columbia, including a portion of the Upper North Fork of the Flathead River area in Montana, were shown to be increasing in number over a 10-year period immediately preceding the South Fork study (McLellan 1989b). The density of grizzly bears was high and increased from 5.7 per 100 square kilometers to 8.0 per 100 square kilometer between 1981 and 1986. The estimated average grizzly bear density was 6.4 per 100 square kilometers, high for an interior population.

Montana Fish, Wildlife and Parks (MFWP) initiated a NCDE grizzly bear trend monitoring project in 2005 (R. Mace, MFWP, unpublished 2006). Thus far, a total of 32 females were captured and 22 of these remain radio-collared in 2006. Trend estimates are expected in 2009.

Additionally, a recent mapping effort (U.S. Forest Service 2002a) used 5 years of location data to map the area outside the recovery zone where grizzly bears may occur. The resulting distribution of known grizzly bear presence extends to the west, south, and east of the recovery zone. Although information is limited and not statistically analyzed, grizzly bear occurrences are being increasingly documented outside the recovery zone line suggesting that the grizzly bear population in the NCDE is expanding. Due to the broad distribution of grizzly bear locations and known grizzly bear distribution within the recovery zone, this expansion is likely due to increased grizzly bear numbers in some areas of the recovery zone.

For comparison, the best available information suggests the YGBE grizzly bear population is stable to increasing (Eberhardt et al., 1994; Boyce, 1995; Boyce et al., 2001). Corresponding with this increasing population, female grizzly bears with cubs are well distributed in the Yellowstone recovery zone and sightings of other individuals with cubs occur outside the recovery and 10-mile buffer zone (Haroldson, 2002, 2003; Podruzny et al., 2002). The authors speculated that the 34 percent expansion of grizzly bear range during 1980 to 1990 was likely a product of improved management practices, a series of good food years, and a population increase. Only an estimate of minimum population number is calculated for the NCDE, and population trend information is not available at this time. However, similarities of access management to the Greater Yellowstone Ecosystem (GYE), the distribution of grizzly bears across the recovery zone, and increasing occurrence of bears outside the recovery zone could reasonably be interpreted as indicative of an increasing grizzly bear population in portions of the NCDE as well.

The DNA-based population estimates for the northern one-third of the NCDE will provide important insights into further assessment of the minimum population estimate derived through Recovery Plan methods, and provide a meaningful context within which to view mortality limits and current levels of human-caused grizzly bear mortality. Likewise, the NCDE-wide grizzly bear population estimate, likely available in late 2006, will be invaluable to assessing the status of the population, gauging the use of minimum population estimates, and assessing the impacts of current levels of human-caused mortality. Trend information from the MFWP efforts will be valuable in assessing the population status. In the meantime, the Service finds no compelling evidence to support a prediction that the NCDE grizzly bear population is in decline. Evidence to the contrary, including current distribution of grizzly bears within and outside the recovery zone, reported numbers and locations of recent sightings and conflicts, information and views of MFWP (MFWP in litt. 2005), and observations by NCDE grizzly bear experts (Waller, 2005), suggest a stable or perhaps increasing number of grizzly bears in several areas of the recovery zone. If the DNA-based population estimates reveal we have substantively erred in our assumptions, we will reassess whether the population status would change our conclusions regarding the effects of this proposed action, in accordance with CFR 402.16.

Factors Affecting Grizzly Bears in the NCDE

A major issue in grizzly bear recovery in the NCDE recovery zone is sanitation related human-caused grizzly bear mortality. Towns and settlements are common in low elevations and major valley bottoms within and adjacent to the recovery zone. Human generated food sources such as bird feeders, garbage, pet and livestock foods, human foods, gardens, and orchards present powerful attractants for grizzly bears. Grizzly bears attracted to these human-generated food sources become habituated and food conditioned. Such bears often become a threat to human safety and property and are killed illegally or removed through agency nuisance grizzly bear control actions.

Sanitation related grizzly bear deaths are among the leading causes of grizzly bear mortality in the NCDE (U.S. Fish and Wildlife in litt. 2004). Data collected since 1980 demonstrate human site conflicts, which involve habituation of bears to human foods and garbage, resulted in 15.5 percent of total grizzly bear mortality within the NCDE recovery zone (Ibid.). This figure increases to 22 percent with the addition of grizzly bear mortality resulting from livestock depredation. Illegal and malicious killing of grizzly bears is the second leading cause of death at 13.5 percent. Legal hunting of grizzly bears is the only activity that exceeded human site conflicts as a source of grizzly bear mortality. Legal hunting of grizzly bears ended in 1991.

An increasing trend is observed in human-caused grizzly bear mortality in the NCDE. The 31 known human-caused grizzly bear mortalities in 2004 was a 29-year high. From 1999 to 2004, the number of grizzly bears removed for conflicts related to human food and livestock depredation increased from 6 to 13 (U.S. Fish and Wildlife Service, 2004), 35 percent and 42 percent of the total mortalities for the respective year. In 2004, 10 of the mortalities were associated with buildings and garbage and 3 of the mortalities involved buildings and grain (U.S. Fish and Wildlife Service 2004). Consistently, mortalities from human-related causes occurred on private lands in the NCDE greater than any other land ownership (Mace and Waller 1998, U.S. Fish and Wildlife Service 2004). Grizzly bears using the interface of rural roaded and multiple-use lands in the Swan Mountains suffered a significantly higher rate of human-caused mortality than individuals using only the multiple-use lands on the Forest (Mace and Waller, 1998).

In the NCDE during 1998 and 2004, significant huckleberry crop failures precipitated an increase in conflicts with grizzly bears (Manley, 2005). During a normal year, a fraction of the grizzly bear population would use natural food sources at low elevations during huckleberry season. In 2004, with the lack of huckleberries at higher elevations, many more grizzly bears used low elevation habitats in search for late summer and fall foods (Manley 2005; R. Mace, Montana Fish, Wildlife and Parks, pers. comm. 2005). The search for food at low elevations puts bears into close proximity to private lands and associated attractants. The number of conflicts and grizzly bear management removals from private and public lands rose dramatically above average. During 2003 and 2004, Montana Fish, Wildlife and Parks Region 1 received over 50 and 225 calls reporting conflicts with grizzly bears, respectively (Manley, 2005). Ninety-five percent were confirmed grizzly bear conflicts and of these, about 95 percent were from private landowners living in or adjacent to grizzly bear habitat. Conflicts involved grizzly bears seeking unnatural foods in yards or actually causing property damage by trying to access foods in vehicles and buildings. Thirty-one grizzly bears were captured in 2004; 40 percent in the summer and 40 percent in the fall, compared to 20 percent captured in the spring. Eighty-eight percent of the captures were on private property, the rest on public lands. In comparison, only 13 grizzlies were captured in 2003, all on private property.

The Recovery Plan identifies access management as an important tool for conserving grizzly bears and their habitat. To facilitate tracking and controlling cumulative effects of access across the NCDE, the recovery zone was divided into Bear Management Units (BMUs). Each BMU in the NCDE were further divided into smaller units, termed subunits. Subunits are approximately the size of an adult female grizzly bear home range (roughly 50 square miles) and provide the basic scale for the analysis of impacts associated with access management and vegetation management projects. See Appendix C for access conditions of each subunit in the NCDE.

The Butte RMP area does not contain lands within the NCDE recovery zone, consequently, the Butte Field Office does not manage any Bear Management Units or Subunits inside the recovery zone. Access management in grizzly bear habitat in the Butte RMP area outside the NCDE recovery zone is generally managed under guidance from the Montana Cooperative Elk-logging Study (U.S. Forest Service, 1982).

The Lolo National Forest adopted a grizzly bear strategy and amended incidental take statement for its Forest Plan in 1996 that included the NCDE Access Committee recommendations and the Flathead Amendment 19 road density goals (U.S. Forest Service 1996; U.S. Fish and Wildlife Service, 1996) for subunits within the NCDE recovery zone. All but one of seven subunits in two BMUs on the Lolo National Forest has met access objectives; work to reduce road densities is on-going in the Swan subunit (U.S. Forest Service 2004).

The Flathead National Forest encompasses all or portions of 11 BMU and has 70 subunits. Of these 70 subunits, 16 occur entirely within designated wilderness, and are not subject to land management actions such as timber harvest and road construction. Amendment 19 established standards and objectives for the remaining 54 subunits. Of these 54 subunits, 40 are predominantly national forest, in that they are comprised of at least 75 percent national forest lands. As of 2005, eighteen of these subunits met all access standards (U.S. Forest Service, 2005b).

Although the Helena National Forest and Lewis and Clark National Forest have not amended their respective forest plans with the NCDE Access Committee recommendations and 1994 Interagency Grizzly Bear Guidelines (IGBC) guidelines (Interagency Grizzly Bear Committee, 1994), the Flathead A19 is considered accepted road management protocol (U.S. Forest Service 2005a; Wendy Maples, U.S. Forest Service, pers. comm., 2005). The Helena and Lewis and Clark Forests have used the 1994 IGBC guidelines to monitor and implement a no net increase in road densities and no loss of core during project planning.

The Helena National Forest manages one BMU with three subunits of the NCDE (Table 4). Of these three subunits, two meet access guidelines. The Lewis and Clark National Forest has 13 subunits in 6 BMUs, 8 subunits consist of less than 75 percent forest service management and are roaded. However, a preponderance of these roads occurs on private rural or ranch lands and do not receive public use. Two subunits with over 75 percent forest service management are in wilderness. Of the three remaining subunits, two meet access objectives (U.S. Forest Service, 2005 in litt.). Glacier National Park road densities are low. Assuming adequate goals for road and trail access management will be attained through recent and upcoming decisions and actions; the Service considers NCDE recovery zone access management as contributing to and promoting grizzly bear recovery.

The NCDE contains large amounts of secure habitat and low total and open road densities in the majority of the subunits. For the subunits in the NCDE recovery zone that have greater than 75 percent Forest Service ownership, the mean secure habitat is 66.5 percent, the mean Total Motorized Access Density (TMAD) is 15.0 percent and the mean Open Motorized Access Density (OMAD) is 18.1 percent (U.S. Forest Service 2004; 2005a; 2005b; U.S. Forest Service in litt., 2005). See appendix C for all subunit values for OMAD, TMAD and secure habitat across the NCDE.

Habitat fragmentation is significant to large carnivores requiring wide vegetative and topographic habitat diversity (Servheen, 1986). Loss and fragmentation of habitat is particularly relevant to the survival of grizzly bears. Grizzly bears are large animals with great metabolic demands requiring extensive home ranges. Movements of grizzly bears may exceed 60 airline miles and their home ranges can encompass from 50 to over 100 square miles in the NCDE. Large expanses of unfragmented habitat are important for feeding, breeding, sheltering, traveling, and other essential behavioral patterns. Grizzly bears occur at low densities, have low reproductive rates, exhibit individualistic behavior, and are largely dependent on riparian habitats also used extensively by people; thus grizzly bear populations are susceptible to human influences. Grizzly bears may avoid key habitats due to human generated disturbances, or become habituated and food conditioned, which ultimately leads to the animal being destroyed. Historically, as human settlements and developments along roads increased in grizzly bear habitat, grizzly bear populations became fragmented. As fragmented population segments become smaller and/or isolated, they are more vulnerable to extinction, especially when human-caused mortality pressures continue. Linkage zones are rather recent concepts in broad management direction for grizzly bears and other large-ranging species (Servheen and Sandstrom, 1993). Linkage zones, or zones of habitat connectivity within or between populations of animals, foster the genetic and demographic health of the species.

Status of grizzly bears in the YGBE

All recovery parameters for the recovery zone were met in 2003 (Schwartz and Haroldson, 2004). Recovery parameters had been met for at least the last 5 years through 2003. The mortality threshold of 5.2 for female bears was slightly exceeded in 2004 with a 6-year running average of 6 human-caused female mortalities (Haroldson and Frey, 2005). There were a total of 26 documented grizzly bear mortalities in 2004, of which 19 were known human-caused deaths, five were natural mortalities, and two were of undetermined causes (Haroldson and Frey, 2005). All other recovery parameters were met in 2004 (Schwartz et al., 2005). The number of females with cubs has surpassed the recovery criterion for a number of years (Haroldson, 2005) and bears now occur where they have not been reported for many years. A total of 49 unduplicated females with 96 cubs were documented in the Greater Yellowstone Ecosystem in 2004 (Haroldson, 2005). With this, the 6-year running average of females with cubs within the Recovery Zone and a 10-mile perimeter has gradually increased from 15 in 1986 to 40 in 2004. The mean litter size of two in 2004 was consistent with past years (Haroldson, 2005).

On November 17, 2005, the Service announced that the Yellowstone Grizzly Bear Ecosystem is a recovered population no longer meeting the Endangered Species Act's definition of *threatened* or *endangered* (70 FR 69854, November 17, 2005). This population has increased from estimates as low as 136 individuals when listed in 1975 to more than 580 animals as of 2004; this population has been increasing since the mid 1990s and is increasing at 4 to 7 percent per year. The range of this population also has increased dramatically as evidenced by the 48 percent increase in occupied habitat since the 1970s. Yellowstone grizzly bears continue to increase their range and distribution annually and grizzly bears in the Yellowstone area now occupy habitats they have been absent from for decades. Currently, roughly 90 percent of females with cubs occupy the Primary Conservation Area (PCA) and about 10 percent of females with cubs have expanded out beyond PCA within the ecosystem.

The Yellowstone Grizzly Bear Ecosystem now represents a viable population which has sufficient numbers and distribution of reproductive individuals so as to provide a high likelihood that the species will continue to exist and be well distributed throughout its range for the foreseeable future. The State and Federal agencies' agreement to implement the extensive Conservation Strategy and State management plans will ensure that adequate regulatory mechanisms remain in place and that the Yellowstone grizzly bear population will not become an endangered species within the foreseeable future throughout all or a significant portion of its range. Therefore, based on the best scientific and commercial information available, the Service delisted GYE grizzly bears on 29 March, 2007 and this population currently does not have protected status under the ESA.

Status of grizzly bears in the CYE and SE

The Cabinet/Yaak Ecosystem in northwestern Montana and northeastern Idaho has over 1,900 square miles of forested and mountainous habitat occupied by grizzly bears. The population in the Cabinet Mountains portion of this area is thought to be less than 15 bears. The Yaak section of the CYE currently supports a minimum of approximately 20 bears. The Yaak population estimate does not include credible reports from the public of grizzly bear observations, which suggest a population estimate of 20 to 30 bears in the Yaak section of the CYE would be conservative (Kasworm et al. 2000). Grizzly bears occur to the north of the U.S.-Canada border, and interchanges of radio-collared bears across the border have been documented (U.S. Fish and Wildlife Service, 1993).

The Selkirk Ecosystem of northwestern Idaho, northeastern Washington, and southeastern British Columbia includes about 1,080 square miles in the U.S. portion and about 875 square miles in the Canadian portion of the recovery zone. The Selkirk recovery zone is the only defined grizzly bear recovery zone that includes part of Canada because the habitat in the U.S. portion is not of sufficient size to support a minimum population. The habitat is contiguous across the border and radio-collared bears are known to move back and forth across the border. Therefore, the grizzly bears north and south of the border are considered one population (U.S. Fish and Wildlife Service, 1993).

Neither the CYE nor the SE grizzly bear populations have attained the Recovery Plan criteria for females with cubs. Population trend information is statistically inconclusive, though the point estimate of the rate of increase declined during 1999 to 2004 (Kasworm et al. 2000, Kasworm 2001, Kasworm et al., 2004) in the CYE. The Service determined that the combined SE-CYE grizzly bear recovery zones were warranted endangered but precluded in 1999 and suggested that the two populations might be inter-connected (FR 26725-26733).

The most recent data indicate that population status is below recovery goals in the CYE for the distribution of females with young in bear management subunits and exceeds the 6-year average of female mortality in the recovery zone (Kasworm et al., 2005). Montana Fish, Wildlife and Parks began augmenting the grizzly bear population in the Cabinet Mountains in 2005.

Status of the Selway-Bitterroot and North Cascades Ecosystems

Grizzly bear recovery efforts in the Selway-Bitterroot Ecosystem and North Cascades Ecosystem are in the planning stages. In the North Cascades Ecosystem, most of the grizzly bear population occurs north of the Canada - U.S. border, but a few grizzly bears persist south of the border. Though suitable habitat remains, grizzly bears were extirpated from the Selway-Bitterroot Ecosystem decades ago. The Service released a final environmental impact statement and decision notice addressing the impacts of reintroducing grizzly bears into the Bitterroot Ecosystem in east central Idaho (U.S. Fish and Wildlife Service, 2000).

Analysis of the species/critical habitat likely to be affected

The biological assessment determined that continued implementation of the Butte Resource Management Plan would likely adversely affect individual grizzly bears that occur in the RMP area. Grizzly bears are listed as threatened under the Act. Critical habitat has not been designated for this species; therefore none would be affected by the proposed action.

IV. ENVIRONMENTAL BASELINE

Under the provisions of section 7(a)(2), when considering the “effects of the action” on listed species, the Service is required to consider the environmental baseline. Regulations implementing the Act (50 CFR 402.02) define the environmental baseline as the past and present impacts of all federal, state, or private actions and other human activities in the action area. Also included in the environmental baseline are the anticipated impacts of all proposed federal projects in the action area that have undergone section 7 consultation, and the impacts of state and private actions which are contemporaneous with the consultation in progress.

Action area, as defined by the Act, is the entire area to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action. For the purposes of this biological opinion, we have defined the action area to be that portion of the RMP area where grizzly bears occur outside of the NCDE recovery zone.

Status of the Species within the Action Area

Grizzly bears are now found on BLM lands managed by the Butte Field Office along the Continental Divide in Lewis and Clark County, Montana, outside of the NCDE recovery zone.

Factors Affecting Species Environment within the Action Area

The environmental baseline is described here in terms of those program areas that affect grizzly bears either through human contact and conflict or through reductions in secure habitat. These program areas include access management, sanitation/food storage, and livestock grazing. The recreation program may also impact grizzly bears, but access and sanitation/food storage are those elements of the recreation program that may adversely affect grizzly bears.

Access Management

Grizzly bears occur on BLM lands outside the recovery zone along the Continental Divide in Lewis and Clark County, Montana. Habitat for grizzly bears is generally of lower quality than areas inside the recovery zone due to high road densities found on state and private lands. Complete road inventories for these areas have not been completed, however a recent BLM analysis of the Hoodoo watershed in Powell County showed that across all ownerships, total road density was 2.45 mi/mi^2, and open road density was 1.54 mi/mi^2. On BLM managed lands, total road density was 1.12 mi/mi^2, while open road density was 0.68 mi/mi^2 (James Sparks Personal Communication), well below the standard for open road density for lands within the recovery zone. The proposed action would allow no net increase in permanent roads built in areas where open road densities are 1 mi/mi^2 or less in big game winter and calving ranges, and within the current distribution of grizzly bear. The proposed action would also manage to reduce open road densities in big game winter and calving ranges, and within the current distribution of grizzly bear where they currently exceed 1 mi/mi^2.

Sanitation/Food Storage

Food Storage Special Order LC00-18 (U.S. Forest Service, 2000) is in effect for all National Forests within the NCDE recovery zone. Similar food storage orders have been in place since 1995. The proposed Butte RMP would require the development and implementation of human food storage regulations and guidelines in grizzly bear distribution zones in coordination with Montana Department of Fish, Wildlife, and Parks and other agencies.

The purpose of the food storage order would be to minimize grizzly bear/human conflicts and thereby provide for visitor safety and recovery of the grizzly bear.

No grizzly bear mortalities have been reported and no management actions towards grizzly bears associated with improper food storage have occurred in the action area (Sarah LaMarr, pers. comm.). Although the adoption of food storage guidelines is likely to effectively prevent food conditioning of grizzly bears on BLM lands, food conditioning of grizzly bears may occur on adjacent lands and thus could potentially lead to grizzly bear management actions on BLM lands as food-conditioned bears move from adjacent lands on to BLM lands.

Livestock Grazing

The Butte RMP area has no sheep allotments either inside or outside of a recovery zone. Therefore, no grizzly bear deaths have occurred on BLM lands as a result of sheep grazing. There are no cattle allotments within the recovery zone however there are active cattle allotments in the action area outside of the recovery zone. There have been no grizzly bear deaths or management removals of grizzly bears on BLM lands or due to BLM grazing program activities.

The Montana legislature has created policy to direct MFWP to protect, conserve, and manage grizzly bears as a rare species of Montana wildlife. With this in mind, the Fish, Wildlife & Parks Commission developed a grizzly bear policy (Section 12.9.103, ARM) to address the need to protect grizzly bear habitat, the need to pursue grizzly research, the role of sport hunting in grizzly bear management, depredations, and the appropriate department response to depredations, and requires compliance with federal regulations relating to grizzly bears (Montana Fish, Wildlife and Parks 2001). Under this direction, MFWP has implemented a conservation program to manage and enhance grizzly bear populations. In 2002, MFWP prepared the Grizzly Bear Management Plan for Southwestern Montana 2002-2012 and Final Programmatic Environmental Impact Statement with input from the Montana Grizzly Bear Working Group and other interested parties (Montana Fish, Wildlife and Parks 2002).

V. EFFECTS OF THE ACTION

Under section 7(a)(2) of the Act, "effects of the action" refers to the direct and indirect effects of an action on the species or critical habitat, with the effects of other activities interrelated or interdependent with that action. Indirect effects are those caused by the proposed action and are later in time, but still are reasonably certain to occur (50 CFR 402.02). The effects of the action are added to the environmental baseline to determine the future baseline and to form the basis for the determination in this opinion. Should the federal action result in a jeopardy situation and/or adverse modification conclusion, the Service may propose reasonable and prudent alternatives that the federal agency can take to avoid violation of section 7(a)(2). The effects discussed below are the result of direct and indirect impacts of implementing the proposed project.

The effects of the action section will address the programmatic issues of access management, sanitation/food storage, and livestock grazing. Based on the history of project level consultation with the U.S. Forest Service and BLM, we conclude that implementation of actions under the RMP within these three program areas have the highest likelihood of adversely affecting grizzly bears either through human contact and conflict or through reductions in secure habitat.

Access Management

The IGBC Taskforce provided standardized definitions for roads and standardized methods to measure road densities and define analysis areas as a result of grizzly bear research information on open and total road densities and grizzly bear core areas (Interagency Grizzly Bear Committee 1994, 1998). The Service considers the management of roads one of the most important factors in grizzly bear habitat conservation and the IGBC Taskforce guidelines as the best direction with which to manage roads on Federal lands. This section focuses on analysis and discussion of the direct and indirect effects of the BLM's motorized access management on the grizzly bear and on the environmental baseline as affected by existing road densities.

General Effects of Roads on Grizzly Bears

Research has confirmed the adverse impacts of roads on grizzly bears (Mace et al. 1996, Mace et al. 1999). Negative impacts associated with roads and excessive road densities influences grizzly bear population and habitat use patterns in numerous, widespread areas. The Grizzly Bear Compendium (Interagency Grizzly Bear Committee 1987) summarized impacts reported in the literature including:

- Avoidance/displacement of grizzly bears away from roads and road activity;
- Changes in grizzly bear behavior, especially habituation to humans, due to ongoing contact with roads and human activities conducted along roads;

- Habitat loss, modification, and fragmentation due to roads and road construction, including vegetative and topographic disturbances; and
- Direct mortality from road kills, legal and illegal harvest, and other factors resulting from increased human-bear encounters.

Habituation and mortality

Mortality is the most serious consequence of roads in grizzly bear habitat. Mortalities result directly from collisions with vehicles and illegal shooting or indirectly through habituation to human presence. Continued exposure to human presence, activity, noise, and other elements can result in habituation, which is essentially the loss of a grizzly bear's natural wariness of humans. High road densities and associated increases in human access into grizzly bear habitat can lead to the habituation of grizzly bears to humans. Habituation in turn increases the potential for conflicts between people and grizzly bears. Habituated grizzly bears often obtain human food or garbage and become involved in nuisance bear incidences, and/or threaten human life or property. Such grizzly bears generally experience high mortality rates as they are eventually destroyed or removed from the population through management actions. Habituated grizzly bears are also more vulnerable to illegal killing because of their increased exposure to people. In the Yellowstone region, humans killed habituated grizzly bears over three times as often as non-habituated grizzly bears (Mattson et al., 1992).

The specific relationship between roads and the mortality risk to grizzly bears is difficult to quantify. The level of human use of roads is one of several factors influencing the mortality risk associated with any road. Research supports the premise that roads facilitate human access into grizzly bear habitat, which directly or indirectly increases the risk of mortality to grizzly bears. Grizzly bears were increasingly vulnerable to illegal and legal harvest as a consequence of increased road access by humans in Montana (Mace et al., 1987) and in the Yellowstone region (Mattson et al., 1992). In southeastern British Columbia, McLellan and Shackleton (1988) reported roads increased access for legal hunters and poachers, the major source of adult grizzly mortality. McLellan (1989b) reported that 7 of 13 successful legal hunters interviewed had been on a road when they harvested their grizzly bear. McLellan and Mace (1985) found that a disproportionate number of mortalities occurred near roads. In the Yellowstone ecosystem, Mattson and Knight (1991) reported that areas influenced by secondary roads and major developments were most lethal to grizzly bears. Aune and Kasworm (1989) reported 63 percent of known, human-caused grizzly bear deaths on the east front of the Rocky Mountains occurred within 1 kilometer (0.6 miles) of roads, including 10 of 11 known female grizzly bear deaths. In Montana, Dood et al. (1986) reported that 48 percent of all known, non-hunting mortalities during the period of 1967 through 1986 occurred within 1 mile of roads. Grizzly bears were also killed by vehicle collision, the most direct form of road-related mortality (Greer 1985, Knight et al., 1981, Palmisciano, 1986).

Several analyses on grizzly bear mortalities for the NCDE have been completed. During 1992-2001, Montana Fish, Wildlife and Parks reported a total of 157 known grizzly bear deaths (including cubs) were attributed to the following sources (percents have been rounded to the nearest whole number): 20 percent (32) management removal due to food conditioning; 13 percent (21) due to illegal, malicious killing; 11 percent (18) due to train collisions; 10 percent (16) under investigation; 8 percent (12) illegal mistaken identification; 8 percent (12) livestock conflicts; 6 percent (9) legal self defense; 6 percent (9) related to human fatalities; 5 percent (8) natural; 4 percent (6) human fatality; 3 percent (5) vehicle collision; 3 percent (5) unknown; 3 percent (4) capture related. A total of 143 of these grizzly bear deaths were known human-caused: 22 percent (32) management removal due to food conditioning; 15 percent (21) due to illegal, malicious killing; 13 percent (18) due to train collisions; 11 percent (16) under investigation; 8 percent (12) illegal mistaken identification; 8 percent (12) livestock conflicts; 6 percent (9) legal self defense; 6 percent (9) related to human fatalities; 3 percent (5) vehicle collision; 3 percent (5) unknown; 3 percent (4) capture related (U.S. Fish and Wildlife Service 2002). During this period 12 females and six cubs were removed from the population due to management removal.

During 1999-2005, 146 known human-caused grizzly bear mortalities were reported in the NCDE (U.S. Fish and Wildlife Service *in litt.* 2006b). They were attributed to the following causes: 54 management removals related to human food/livestock; 30 train and vehicle collision; 41 malicious illegal; 14 legal self-defense/hunter; 3 management removals related to a human fatality; and 4 handling. Of the human-caused mortalities during this period, 63 were female, 69 were male and 14 were unknown (U.S. Fish and Wildlife Service *in litt.*, 2006b).

Subadult grizzly bears are more often vulnerable to habituation and illegal killing or they conflict with people and are removed through management action. Subadult grizzly bears frequently traverse long distances or unknown territory, increasing the likelihood of encountering roads, human residences or other developments where human food or other attractants are available, increasing the potential for habituation and/or conflicts with people. Between 1988 and 1993, six of seven grizzly bear management removals from the Flathead National Forest and surrounding area involved subadults (U.S. Forest Service, 1994a, 1994b). In the Yellowstone ecosystem, roads impacted individual age and sex classes of grizzly bears differently. Subadults and females with young were most often located near roads, perhaps displaced into roaded, marginal habitat by dominant grizzly bears (Mattson et al., 1987, Mattson et al., 1992).

Known, human-caused grizzly bear mortality in the South Fork Study area during the 6-year period of 1988 through 1994 appears relatively high when compared to other studies. During a 9-year period of research in southeastern British Columbia, McLellan (1989b) reported fewer human-caused grizzly bear mortalities (11) than occurred during 6 years of research in the South Fork Study area (13) (excluding legal hunter and research-caused mortalities). Although the British Columbia study area was roaded for gas exploration, timber harvest and other uses, the area had few permanent human residents and generally received lower use by humans than did the South Fork Study area in Montana. In 1994, grizzly bear population trajectories for the two study areas were computed (Servheen et al., 1994). In the British Columbia study area, high survivorship rates of adult and subadult females resulted in an upward trend in the grizzly bear population. In the South Fork Study area, relatively low adult and subadult female survivorship rates resulted in an annual decline in the grizzly bear population. Adult female grizzly bear mortality was the most important factor in determining trend, and most known grizzly bear mortalities were determined to be human-caused.

The presence of roads alone does not necessarily result in direct mortality of grizzly bears, but the proximity of the land to human population centers, resulting high numbers of people using roads, and dispersed recreation in habitat around roads can pose considerable risks to grizzly bears. Social values and attitudes also contribute to the level of mortality risk to grizzly bears. Incidental or accidental human-caused grizzly bear mortality, combined with a few individuals intent on illegally shooting grizzly bears, can collectively result in serious, detrimental effects to grizzly bear populations. Access management can be instrumental to reducing mortality risk to grizzly bears by managing the present and anticipated future road use-levels resulting from continued timber harvesting and the increasing human population in western Montana.

Displacement and Security

Some grizzly bears, particularly subadults, readily habituate to humans and consequently suffer increased mortality risk. However, many grizzly bears under-use or avoid otherwise preferred habitats that are frequented by people. Such under-use of preferred habitat represents modification of normal grizzly bear behavior. Negative association with roads arises from the grizzly bears' fear of vehicles, vehicle noise, and other human-related noise around roads, human scent along roads and hunting and shooting along or from roads. Grizzly bears that experience such negative consequences learn to avoid the disturbance and annoyance generated by roads. Such animals may not change this resultant avoidance behavior for long periods after road closures. Even occasional human-related vehicle noise can result in annoying grizzly bears to the extent that they continue to avoid roads.

All factors contributing to direct links between roads and displacement from habitat have not been quantified. As with mortality risk, the level of road-use by people is likely an important factor in assessing the potential displacement caused by any road. Contemporary research, however, indicates that grizzly bears consistently were displaced from roads and habitat surrounding roads, often despite relatively low levels of human use (Mattson et al. 1987, McLellan and Shackleton 1988, Aune and Kasworm 1989, Kasworm and Manley, 1990; Mace and Manley, 1993; Mace et al., 1996).

In Montana, Aune and Stivers (1982) reported that grizzly bears avoided roads and adjacent corridors even when the area contained preferred habitat for breeding, feeding, shelter, and reproduction. McLellan and Shackleton (1988) found that grizzly bears used areas near roads less than expected in southeastern British Columbia and estimated that 8.7 percent of the total area was rendered incompatible for grizzly bear use because of roads. In Montana, Mace and Manley (1993) reported use of habitat by all sex and age classes of grizzly bears was less than expected in habitats where total road densities exceeded 2 miles per square mile. Twenty-two percent of the South Fork Study area exceeded 2 miles per square mile. Adult grizzly bears used habitats less than expected when open motorized access density exceeded 1 mile per square mile. Further, female grizzly bears in the South Fork Study area tended to use habitat more than 0.5 mile from roads or trails greater than expected. As traffic levels on roads increased, grizzly bear use of adjacent habitat decreases (Mace et al., 1996). In Yellowstone, Mattson et al. (1992) reported wary grizzly bears avoided areas within 2 kilometers (1.2 miles) of major roads and 4 kilometers (2.4 miles) of major developments or town sites.

Research suggests that grizzly bears benefit from road closures aimed at minimizing traffic on roads within important seasonal habitat, especially in low elevation habitats during the spring (Mace et al., 1999). When roads are located in important habitats such as riparian zones, snowchutes and shrub fields, habitat loss through avoidance behavior can be significant. Mace et al. (1996) found that most of the roads within grizzly bear seasonal ranges were either closed to vehicles or used infrequently by humans. Some grizzly bears avoided areas with a high total road density even when the roads were closed to public travel. If human-related disturbances such as road use or timber harvest continue in preferred habitats for extended periods of time, grizzly bear use of the area may be lost, particularly use by female grizzly bears. In the Swan Mountain study (Mace et al., 1996), female grizzly bear home range selection of unroaded cover types was greatest and as road densities increased, selection declined. Zager (1980) reported the avoidance of roads by females with cubs. Aune and Kasworm (1989) and McLellan (1989a) found that female cubs generally established their home range within or overlapping with their mother's home range, where as males generally dispersed from their mother's home range. Long-term displacement of a female from a portion of her home range may result in long-term under-use of that area by female grizzly bears because cubs have limited potential to learn to use the area. In this way, learned avoidance behavior could persist for several generations of grizzly bears before grizzly bears again utilize habitat associated with closed roads. Thus, displacement from preferred habitats may significantly modify normal grizzly bear behavioral patterns.

Grizzly bears can also become conditioned to human activity and show a high level of tolerance especially if the location and nature of human use are predictable and do not result in overtly negative impacts for grizzly bears (Mattson, 1993). In Glacier National Park, Jope (1985) suggested grizzly bears in parks habituate to high human use and showed less displacement, even in open habitats. Yonge (2001) found that grizzly bears near Cooke City, Montana, were willing to consistently forage in very close proximity to high levels of human use if cover was sufficient and energetically efficient feeding opportunities were present. Both Mattson (1993) and Yonge (2001) postulated that areas with higher levels of human activity might have a positive effect for bears by serving as a kind of refugia for weaker population cohorts (subadults and females with cubs) seeking to avoid intra-specific competition (adult males). However, Mattson qualified this observation by adding that the beneficial effects vary as to whether hunting is allowed, and how closely the human population is regulated. Further, food conditioned grizzly bears were much more likely to be killed by humans.

Both Yonge (2001) and Mattson (1993) indicated that increases in human use levels can be deleterious if some human activities are unregulated, such as use of firearms, presence of attractants, nature and duration of human uses. Conversely, a level of coexistence between humans and grizzly bears can be achieved if such activities are controlled. Near Cooke City, Montana, the New World Mine reclamation project had minimal effects on grizzly bears, in part because reclamation activities were temporally and spatially predictable and people associated with the work were carefully regulated against carrying firearms or having attractants available to grizzly bears (Tyers, unpublished 2006). In the Swan Valley of Montana, raw location data from a small number of collared grizzly bears show nocturnal use of highly roaded habitat (C. Servheen, pers. comm. 2005). The Swan Valley data have not been statistically analyzed and the study was not designed to determine the impact of roads on bears, sample size is very small, and perhaps most importantly, mortality rates for these grizzly bears are not yet known. However, these data indicate that some grizzly bears can apparently habituate to relatively high levels of human activity.

Low-elevation riparian habitats are of significant seasonal importance to grizzly bears in the YGBE. Grizzly bears typically use the lowest elevations possible for foraging during spring. Craighead et al. (1982) described the value of low-elevation habitats to grizzly bears. The MFWP concluded that maximum numbers of grizzly bears can be maintained only if the species continues to have the opportunity to use both the temperate and subalpine climatic zones (Dood et al. 1986).

Research identified the following individual home-range selection patterns in local grizzly bear population segments: (1) some individual animals live almost exclusively (except for denning) in low elevation habitats; (2) other individuals maintain home ranges in more mountainous or remote locations; and (3) some individuals migrate elevationally on a seasonal basis (Servheen 1981, Aune and Stivers 1982).

Specific causes or factors involved in the selection or preferences for certain home ranges by grizzly bears are not well understood. Mace and Manley (1993) found that grizzly bear home ranges in the South Fork Study area included remote areas in high elevations. South Fork Study grizzly bear habitat-use data, road density analyses of the South Fork Study area, previous studies, and CEM analysis (U.S. Forest Service, 1994a, Mace et al., 1999) suggested that low-elevation habitats were not freely available to grizzly bears because of high road densities and associated human use in these areas. High road densities in low-elevation habitats may result in avoidance of or displacement from important spring seasonal habitat for some grizzly bears or high mortality risk for those individuals that venture into and attempt to exploit resources contained in these low-elevation areas.

Core areas

The Service considers significant declines in expected use of habitat by grizzly bears a serious consequence of high road densities. Significant declines in grizzly bear use of MS-1 habitat (habitat areas within a recovery zone that are key to the survival of the grizzly where seasonal or year-long activity, under natural, free-ranging conditions is common), especially those habitat components with high seasonal values, indicate that habitat needed for survival and recovery is less available. Ideal grizzly bear habitat provides some areas isolated from excessive levels of human impact. Because grizzly bears can conflict with humans and their land uses, grizzly bear populations require a level of safety from direct human-caused mortality and competitive use of habitat such as settlement, roading, recreation, excessive logging, mining and livestock grazing.

Analysis in the South Fork Study area (Mace and Manley, 1993, Mace et al., 1996) indicated the importance of unroaded habitat, especially for females with cubs. Mace and Manley (1993) reported adult females used habitat further than 0.5 mile from roads or trails more than expected; 21 percent of the composite home range had no trails or roads and 46 percent was unroaded (greater than 0.5 mile from a road). Substantive blocks of unroaded habitat were components of all adult female home ranges. Of the adult female locations within unroaded polygons, 83 percent occurred within 7 polygons that exceeded 2,260 acres in size. Based on grizzly bear habitat use data from the Yellowstone ecosystem, Mattson (1993) recommended that micro scale security areas in that region be an absolute minimum of 6 kilometers (3.6 miles) in diameter or 28 square kilometers (10 square miles) and should be secure for a minimum period of 5, or preferably 10, years.

The IGBC Taskforce (Interagency Grizzly Bear Committee, 1994) recognized the importance of secure areas to grizzly bears. The Taskforce defined "core areas" as those areas with no motorized access (during the non-denning period) or heavily used foot/livestock trails, providing some level of secure habitat for grizzly bears. Motorized use, such as snowmobiling or that associated with timber harvest, could occur within core areas during the denning (winter) period. The Taskforce recommended the establishment of core areas in all recovery zone subunits, the size of core area should depend on ecosystem-specific habitat conditions, and that a core area remain intact on the landscape for at least 10 years. In the South Fork Study area of the NCDE, approximately 68 percent of the adult female composite home range was core area (U.S. Forest Service in litt. 1994, K. Ake, U.S. Forest Service, pers. comm., 2005).

Effects of Roads in the Action Area

Continued implementation of the Butte RMP impacts grizzly bears outside of the recovery zone. Grizzly bears have been and will continue to be impacted to varying degrees by existing road densities, road use, decreasing road densities in some areas, salvage harvest, recreation activity in all seasons, legal big game hunting, routine land management tasks, and natural changes in habitats in the ecosystem. Routine management includes road and facilities maintenance and wildlife improvement projects.

Portions of the action area have high levels of activity along roads while other portions have low activity along roads or no roads at all. Adverse effects from access management on the resource area may be resulting in the displacement of individual grizzly bears, the avoidance of suitable habitat and/or the reduction of habitat to an unsuitable condition. High road densities and lack of core or secure areas exist across many areas outside the NCDE recovery zone. However, the overall habitat condition within the NCDE recovery zone is of high quality and grizzly bear populations are increasing.

The Butte RMP would preclude additional permanent road construction in grizzly bear distribution where such construction would result in road densities exceeding 1 mi/mi^2, total road miles would decrease in those areas of grizzly bear distribution that currently exceed the 1 mi/mi^2 road density standard. Periodic new road construction may occur, but overall there would be a downward trend in the miles of roads in grizzly bear habitat. The Service concludes that it is reasonable to assume that under the RMP, the level of permanent roads in areas outside the recovery zone will not substantively increase during the life of the RMP, with some local exceptions. This assumption is based on the objectives and standards contained in the proposed action as well as recent history and trends in road building and decommissioning in an adjacent BLM field office that show fewer permanent roads on the landscape. For example, in the Hoodoo Mountain watershed, a primary grizzly bear habitat in the Garnet RMP area, open road densities are 0.50 mi/mi^2, and total road densities are 1.12 mi/mi^2 on BLM lands (Tables 2 and 3). These road density measures are well below those determined to result in adverse effects to grizzly bears. However, current high open and total road densities in some areas outside of the recovery zone, may result in adverse effects to grizzly bears attempting to live in these areas. These roads and any new roads constructed in the future may adversely impact grizzly bears' ability to find food resources, breed and raise young, and find shelter.

Table 2. Total road density; open road density during fall; and open road density during spring, summer, and winter on BLM lands located in the Hoodoos Watershed Analysis Boundary, Missoula BLM Field Office.

Road Density	Pre-Treatment	Post-Treatment	Compliance
Total Road Density	1.12 mi/mi^2	1.18 mi/mi^2	N/A
Open Road Density (fall)	0.50 mi/mi^2	0.52 mi/mi^2	yes
Open Road Density (spring, summer, and winter)	0.68 mi/mi^2	0.70 mi/mi^2	yes

Table 3. Total road density; open road density during fall; and open road density during spring, summer, and winter in the Hoodoos Watershed Analysis Boundary (all ownerships) Missoula BLM Field Office.

Total Road Density	2.45 mi/mi^2	2.45 mi/mi^2	N/A
Open Road Density (fall)	0.96 mi/mi^2	0.98 mi/mi^2	yes
Open Road Density (spring, summer, and winter)	1.54 mi/mi^2	1.56 mi/mi^2	no

Under the RMP, temporary roads built for resource extraction such as timber harvest or mining may remain on the landscape for several years and receive a substantial amount of use. Such roads may also cause temporary adverse effects to grizzly bears, such as displacement from key habitats. The Service expects that temporary roading will occur on lands within the distribution of grizzly bears on the Butte RMP area, outside the recovery zone. The Service also anticipates some level of adverse effects to grizzly bears with home ranges impacted by these temporary roads. However, effects would be moderated if the BLM continues its record of decommissioning temporary roads. In addition, on adjacent Helena National Forest lands inside the recovery zone, road densities have been decreasing in recent years leading to improved conditions for grizzly bears in the area managed primarily for their recovery (Forest Service, 2006).

Sanitation/Food Storage

This section focuses on analysis and discussion of the direct and indirect effects to grizzly bears related to sanitation and food storage issues. Mortality of grizzly bears may occur indirectly through habituation to human presence. Also refer to the ‘habituation and mortality’ subsection in the ‘General Effects of Roads on Grizzly Bears’ section for further discussion on habituation.

General Effects of Sanitation/Food Storage and Habituation

Human-caused mortality of grizzly bears results from management action, train and auto collision, trapping during research or management action, defence of human life and property, and illegal killing. Grizzly bear-human conflicts resulting in management removal of grizzly bears habituated to human foods or livestock is a leading cause of grizzly bear mortality in the NCDE (U.S. Fish and Wildlife Service, 2004). The number of management removals is exceeded only by legal hunting that was discontinued in 1991.

The Service is concerned with the significant number of grizzly bear mortalities resulting from habituation and conditioning to human-related foods. An increasing trend is observed in human-caused grizzly bear mortality in the NCDE. The 31 known human-caused grizzly bear mortalities in 2004 was a 29-year high. From 1999 to 2004, the number of grizzly bears removed for conflicts related to human food and livestock depredation increased from 6 to 13 (U.S. Fish and Wildlife Service, 2004), 35 percent and 42 percent of the total mortalities for the respective year. Grizzly bears face management action on public lands and other land ownerships. Consistently, mortalities from human-related causes occurred on private lands in the NCDE greater than any other land ownership (Mace and Waller 1998, U.S. Fish and Wildlife Service, 2004). Grizzly bears using the interface of rural roaded and multiple-use lands in the Swan Mountains suffered a significantly higher rate of human-caused mortality than individuals using only the multiple-use lands on the Forest (Mace and Waller, 1998).

Permanent or seasonal human residences and livestock facilities with improperly stored garbage, livestock or pet foods can lure grizzly bears to private property and are particular sources of grizzly bear food conditioning. Food conditioned grizzly bears enter unsecured garbage receptacles, sheds and other buildings in search of a reward. In the NCDE in 2004, 10 mortalities were associated with buildings and garbage; three mortalities involved buildings and grain (U.S. Fish and Wildlife Service, 2004). Accessibility to human related attractants and conditioning to those rewards can lead to management removal and to mortality of grizzly bears by people defending their life and property.

Mace and Waller (1998) studied grizzly bear movements in three types of access situations in the Swan Mountains in Montana: multi-use Forest Service lands, unroaded wilderness with no permanent human dwellings, and roaded rural areas adjacent to multiple-use zones and composed of private lands with roads and developed for permanent homes, farms, or service facilities. Grizzly bears spent varying amounts of time in the three zones. Grizzly bears in rural roaded and wilderness areas faced 21 and 15 times increased risk of human-caused mortality than those bears using multiple-use lands only. The researchers recommended that where concentrated human uses occur on public lands and human foods and attractants are present on private lands, efforts to minimize grizzly bear exposure to these elements is important to increasing grizzly bear numbers and improve long-term population trend. Also, the authors suggested more public road closures would be of limited mitigative value for decreasing grizzly bear mortality.

Grizzly bears face direct mortality risks on public land relatively infrequently in the NCDE. Management action due to human food habituation does occur. However, on Forest Service administered lands, grizzly bear mortalities more often resulted from mistaken identity during legal hunting season, illegal or malicious killing, or automobile collision (U.S. Fish and Wildlife Service 2004). Glacier National Park receives an average of 1.7 million visitors a year with concentrated use in developed areas and dispersed in the backcountry (National Park Service 2005). Between 1980 and 2002, only 10 grizzly bear mortalities were attributed to management action due to human-related foods in Glacier Park (U.S. Fish and Wildlife Service, in litt., 2003). In comparison, in 2004 alone, 13 grizzly bears were removed from private lands within the NCDE because of habituation.

Ake et al. (1998) summarized human-caused grizzly bear mortality locations for the period 1984 to 1996. An estimate of the amount of time grizzly bears spent in rural, roaded, and backcountry area (Mace and Waller 1998) was then compared with mortality locations. Although grizzly bears spent less than 5 percent of time in rural settings, 56 percent of human-caused grizzly bear mortality occurred in rural roaded areas. Grizzly bear mortality data collected since 1998 support the premise of increased risk to grizzly bears in rural roaded areas. In the NCDE, mortalities associated with roaded rural (private) areas exceeded the sum of mortalities from Forest Service roaded areas and areas away from roads. Distribution data from 2003 and 2004 show a pattern of management removals at the interface of public and private lands in the NCDE (U.S. Fish and Wildlife Service 2004). BLM lands in the action area tend to be more scattered, and intermingled with private and state-owned lands than the Forest Service Lands referenced above. For this reason, despite the low probability of bears becoming food conditioned on BLM lands, BLM lands may be more likely to host bears conditioned on other ownerships.

Grizzly bears habituated and conditioned to human foods in the GYE also ranged closer to human developments and suffered higher mortalities than their more wary counterparts (Mattson et al., 1992). Gunther et al. (2004a) reviewed grizzly bear-human conflicts in the GYE between 1992 and 2000. The second highest source of human-caused grizzly bear mortality included livestock depredation and anthropogenic foods. Defense of human life and property resulted in the highest level of mortalities. Although no distinct geographic concentrations of mortalities were evident, most management removals occurred outside of the Yellowstone recovery zone and on private land. In 2003, 85 percent of human-grizzly bear conflicts involved human foods or livestock; 71 percent of conflicts were concentrated in three areas of mixed ownership to the east of Yellowstone National Park (Gunther et al., 2004b). Two of 12 known human-caused grizzly bear mortalities reported in the GYE in 2003 resulted from site conflicts involving anthropogenic food; both removals occurred on private property (Haroldson and Frey, 2004).

Yellowstone National Park received close to 3 million visitors, approximately 670,000 automobile campground use nights, and 43,000 backcountry campers from 2000 through 2003 (Gunther, 2004). One-hundred and four known grizzly bear mortalities occurred in the GYE, 15 in Yellowstone National Park, during that 4-year period (Haroldson and Frey 2000, 2001, 2002, 2003). Habituation and food conditioning was not identified as a source of human-caused grizzly bear mortality. Vehicle collisions, wolf predation, natural processes and unknown (2 individuals) were causes of grizzly bear deaths in the Park. Grizzly bear mortalities occurred more frequently on National Forest lands and private lands surrounding Yellowstone National Park than within the park boundary. Conflicts with hunters were a major source of grizzly bear death on National Forest lands. Nuisance removals for property damage, livestock depredation, and food conditioning were primary reasons for mortality on private property.

Incidence of property damage or conflicts associated with human related foods is inversely proportional to the availability of high quality grizzly bear resources; during periods of poor natural food production incidences of human-grizzly bear conflicts increase. When poor seasonal bear foods exist in part or through the entire nondenning season in the GYE, the incidences of bears causing property damage and obtaining anthropogenic foods increased four fold over average or good years (Gunther et al., 2004a). The conflict relationship is magnified when the availability of late season natural foods such as whitebark pine seeds is insufficient to meet the high energy requirements during hyperphagia (Mattson et al., 1992).

Numerous studies in the NCDE elucidate the importance of late-season frugivory, especially globe huckleberries (*Vaccinium globulare*), by grizzly bears (Martinka and Kendall, 1986, Weaver et al., 1990). Berry failure due to drought or destruction of plants by fire would force grizzly bears to range more widely than in normal periods of seasonal availability (Blanchard and Knight, 1991). Therefore, grizzly bears face an increased risk of encounters with humans and ultimately human-caused mortality during the autumn season. Grizzly bears in some areas that avoided trails with human activity during part of the year changed this avoidance behavior when a favored berry resource came into season (Donelon, 2004). Although grizzly bears still had a low tolerance for trails with high human activity, the tendency to approach areas of human activity when nutritional and energy needs are high could put individuals at an increased risk of conflict.

In the NCDE during 1998 and 2004, significant huckleberry crop failures precipitated increased conflicts with grizzly bears (Manley, 2005). During a normal year, a fraction of the grizzly bear population would use natural food sources at low elevations during huckleberry season. In 2004, with the lack of huckleberries at higher elevations, many more grizzly bears used low elevation habitats in search of late summer and fall foods (Manley 2005; R. Mace, Montana Fish, Wildlife and Parks, pers. comm. 2005). The search for food at low elevations puts bears into close proximity to private lands and associated attractants. The number of conflicts and grizzly bear management removals from private and public lands rose dramatically above average. During 2003 and 2004, Montana Fish, Wildlife and Parks Region 1 (encompassing the action area) received over 50 and 225 calls reporting conflicts with grizzly bears, respectively (Manley, 2005). Ninety-five percent were confirmed grizzly bear conflicts and of these, about 95 percent were from private landowners living in or adjacent to grizzly bear habitat. Conflicts involved grizzly bears seeking unnatural foods in yards or actually causing property damage by trying to access foods in vehicles and buildings. Thirty-one grizzly bears were captured in 2004; 40 percent in the summer and 40 percent in the fall, compared to 20 percent captured in the spring. Eighty-eight percent of the captures were on private property, the rest on public lands. In comparison, only 13 grizzlies were captured in 2003, all on private property.

Effects of Sanitation/Food Storage and Habituation in the Action Area

There is a food storage special order in effect for that portion of the NCDE recovery zone managed by the U.S. Forest Service (U.S. Forest Service, 2000). Similar food storage orders have been in place since 1995. There is no food storage order in place for BLM lands, however, the proposed action requires that a food storage strategy be developed that will minimize grizzly bear-human encounters and provide for user safety and the protection of the grizzly bear. A food storage strategy would substantially reduce the potential for adverse effects to bears as a result of food conditioning and habituation. The measures in the food storage requirements would help to reduce the potential for or eliminate human-grizzly bear conflicts and the potential for adverse effects to grizzly bears.

No grizzly bear mortalities or management actions towards grizzly bears associated with improper food storage have been reported on BLM lands within the action area (Sarah LaMarr, pers. comm.). However, food conditioning of grizzly bears occurs on private lands adjacent to BLM lands and the potential for adverse impacts to grizzly bears on BLM lands does exist. Throughout the distribution of grizzly bears, food conditioning remains a fairly serious problem in relation to grizzly bear mortality.

Habituation and food conditioning of grizzly bears is a serious concern in all grizzly bear populations. All agencies follow the IGBC Guidelines (Interagency Grizzly Bear Committee 1986) for nuisance bear management. Within public lands inside recovery zones grizzly bears must be determined to be a nuisance by specific criteria before they can be controlled (Interagency Grizzly Bear Committee, 1986, U.S. Forest Service, 1986). Information in the biological assessment indicates that there have been no grizzly bear conflicts reported and no management removal of bears as a result of food or attractants in the action area. However, as the number of grizzly bears increase and the number of people residing in and visiting the area increase, the number of grizzly bear-human conflicts related to food and attractant storage may increase as well. Therefore, it is reasonable to expect that some risk of adverse impacts to grizzly bears exists.

Livestock Grazing

Effects of livestock grazing on grizzly bears are generally related to depredations of livestock by grizzly bears, disposal of livestock carcasses, storage of human food and stock feed, and grizzly bear habituation, food conditioning and mortality risk associated with these activities. Depredating bears may become food conditioned resulting in management actions that remove bears from the population. The BLM has several cattle allotments but no sheep allotments within the action area.

Although grizzly bear conflicts with cattle do exist, the more significant problems have been with sheep (Orme and Williams, 1986). The adverse effects of domestic sheep grazing on grizzly bears are well documented (Knight and Judd, 1983; Johnson and Griffel, 1982). Sheep grazing in occupied grizzly bear habitat poses substantive risks to grizzly bears since bears kill sheep much more readily than other livestock and because sheep are often closely tended by herders typically armed and protective of their flock. In one study in the YGBE, of 24 grizzly bears known to use livestock allotments, 10 were known to kill livestock (Knight and Judd, 1983). Of these bears, 7 killed sheep and 5 were trapped and instrumented. All but one instrumented grizzly bear cub that had the opportunity to kill sheep did so. Grizzly bears that kill livestock include a range of ages and both sexes (Johnson and Griffel, 1982).

Being an opportunistic feeder, any individual grizzly bear can learn to exploit livestock as an available food source just as easily as they habituate to other human food sources (Johnson and Griffel, 1982). Knight and Judd (1983) reported several differences between cattle and sheep conflicts with grizzly bears. They found that all radio-collared grizzly bears known to have come in close contact with sheep killed sheep, but most grizzly bears that encountered cattle did not make kills. They also found that all known cattle kills were carried out by adult bears 7 years or older, while both adults and subadults from 1 to 13 year old killed sheep. An attractant such as a sheep allotment outside the recovery zone may draw bears from within the recovery zone and affect recovery of the NCDE grizzly bear population. Grizzly bears that killed sheep, usually took multiple sheep over several days. However in each instance when the sheep were moved out of the area the predation ended (Johnson and Griffel, 1982).

Short term domestic sheep or goat grazing could occur under the Butte RMP in areas occupied or potentially occupied by grizzly bears. Long term effects of this program are expected to improve habitat conditions for wildlife in general, including grizzly bears. It is possible that conflicts with grizzly bears could occur, but are unlikely due to the conservation measures adopted to prevent grizzly bear interactions with sheep in this program (BLM 2007, pg. 33, outlined below).

1. Domestic sheep grazing to control noxious weeds would not be used previous livestock depredations have occurred from grizzly bear and wolves.
2. Domestic sheep would be removed from a project area if depredation or encounters occur from grizzly bears and wolves.
3. Any contracts or agreements to use domestic sheep grazing to control noxious weeds would specify that no control actions against grizzly bears or wolves would be requested by the contractor if depredations or encounters occur as part of the weed grazing action. Any encounters with wolves or grizzly bears would be reported to Montana Fish, Wildlife and Parks and the USDA Wildlife Services.
4. Domestic sheep would be herded, and attended by guard dogs at all times.
5. Temporary, predator-proof electric fencing would be used to protect night bedding areas where potential for predation by grizzly bears or wolves exists.

No grizzly bear mortalities or removals have occurred on BLM lands in the Butte RMP area. However, if the BLM adds sheep, and to a lesser extent cattle, in areas outside the recovery zone the potential for conflicts to occur would be expected to increase. Our concern is that allotments may become attractants for grizzly bears living both in and outside the recovery zone, resulting in grizzly bear mortality sinks.

Effects Summary

BLM lands in the action area outside of the recovery zone are not primarily managed for grizzly bears. As anticipated in the Recovery Plan, grizzly bears are expanding their range outside of the recovery zone. Grizzly bears outside the recovery zone probably experience a higher level of adverse impacts due to land management actions than do grizzly bears inside. However, a number of grizzly bears are apparently able to live in habitat on BLM lands outside of the recovery zone. As grizzly bears expand their range, it is possible that BLM will experience increasing conflicts involving grizzly bears and people as a result of access management, sanitation/food storage and livestock depredation. This may lead to a grizzly bear being either intentionally or inadvertently killed or removed from the population.

Road density, authorized under the RMP or predating it, has the potential to adversely affect grizzly bears in the action area. Some areas have no motorized activity while other areas receive heavy motorized use. Areas with high road densities may lead to the under-use of suitable habitat by grizzly bears. Access management for the analysis area outside of the recovery zone has not been calculated according to the access protocol. However, a rough depiction of road density was presented in the biological assessment. Road densities are high in the action area in some areas outside the recovery zone. These tend to be areas of private or state land ownership. BLM lands have lower average road densities, with some high densities in localized areas. Inside the recovery zone the U.S. Forest Service provides large amounts of secure habitat and low total and open road densities. We have determined that the NCDE recovery zone includes enough land area to provide for a recovered grizzly bear population (U.S. Fish and Wildlife Service, 1993).

The management of roads in grizzly bear habitat continues to be a difficult management issue. Road reclamation is costly and road use restrictions can be socially contentious. However, the BLM continues to make progress in reducing impacts of motorized transport. We expect that road densities will be reduced in grizzly bear habitat through the implementation of the proposed Butte RMP. The RMP access management guidance outside of the recovery zone provides for use by grizzly bears but likely at lower numbers than for areas inside the recovery zone.

Human access into grizzly bear habitat can lead to the habituation of grizzly bears to humans. Habituation in turn increases the potential for conflicts between people and grizzly bears. Habituated grizzly bears often obtain human food or garbage and become involved in nuisance bear incidences, and/or threaten human life or property. Such grizzly bears generally experience high mortality rates as they are eventually destroyed or removed from the population through management actions. Habituated grizzly bears are also more vulnerable to illegal killing because of their increased exposure to people. No grizzly bear mortalities have been reported on BLM lands related to improper food storage. However, food conditioning occurs on adjacent lands and the potential for adverse impacts to grizzly bears continues to be an issue on the Butte RMP area. BLM has taken actions to minimize adverse effects on grizzly bears as shown above through the

RMP, past accomplishments, and current management direction. As grizzly bears increase in numbers outside of areas with regulated attractant storage, we anticipate an increased risk that grizzly bears would become food habituated and subject to potential management removal. With the commitment in the RMP to develop a food storage strategy, we believe that the contribution of BLM lands to food conditioning of grizzly bears and subsequent conflicts with people would be minimal.

Conflicts arising from livestock grazing are recognized as a source of human-caused mortality of grizzly bears. Grizzly bears habituated to livestock as a food source are more likely to be destroyed or removed from the population due to management control and defense of property actions. Further, as the presence of grizzly bears increase in the action area outside of the recovery zone, we expect an increase in the number of grizzly bears subject to potential management removal as a result of grizzly bear-livestock conflicts. However, the lack of livestock conflicts in the past on BLM lands with cattle allotments suggests that such conflicts will be rare.

Although the BLM's management of grizzly bear habitat outside of the NCDE recovery zone results in direct and indirect adverse effects on individual grizzly bears, we do not anticipate that these effects will have appreciable negative impacts on the NCDE grizzly bear population. Thus we do not expect BLM management outside of the recovery zone to negatively affect recovery of the population. The areas in which the BLM allows continued and expanded road use, does not have a mandatory food storage order are outside of the recovery zone and are not considered to be essential to the conservation of the grizzly bear. The Recovery Plan stated that grizzly bears living within the recovery zone are crucial to recovery goals and hence to delisting. Grizzly bears inside and outside of the recovery zone are listed as threatened under the Act, but only lands inside the recovery zone are considered essential to, and therefore managed primarily for, the recovery and survival of the grizzly bear as a species. In developing the NCDE recovery zone, all areas necessary for the conservation of the grizzly bear were included.

Even though the RMP areas outside the recovery zone are not essential to the conservation of the species, the BLM has managed the lands in such a way that they have allowed grizzly bears to expand into these zones, survive and reproduce. Thus, although access management, sanitation/food storage and livestock grazing may adversely affect individual grizzly bears, we anticipate that grizzly bears will continue to be able to inhabit these areas into the future under the RMP.

VI. CUMULATIVE EFFECTS

Cumulative effects include the effects of future state, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

In 2002, Montana Fish, Wildlife and Parks prepared the Grizzly Bear Management Plan for Southwestern Montana 2002-2012 and Final Programmatic Environmental Impact Statement with input from the Montana Grizzly Bear Working Group and other interested parties (Montana Fish, Wildlife and Parks, 2002). This document is expected to be a strategy for initiating, implementing and learning and these efforts and resulting recommended programs will likely become part of the State Grizzly Bear Management Plan. The State Grizzly Bear Management Plan will entail developing a set of plans on the scale of Ranger Districts, Conservation Districts or valleys and local strategies would be cooperatively designed (Montana Fish, Wildlife and Parks, 2002).

Private lands in and adjacent to BLM lands are being developed for residential or business use. The human population in the area has experienced relatively high growth during the recent decade and growth is expected to continue. As more people use private land and adjoining federal land for homes, recreation or business, the challenge to accommodate those uses in ways that continue to protect the grizzly bear population increases. The large federal land ownership, large blocks of wilderness within which human access is restricted by regulation and topography, and highly regulated national park back country serve to reduce the impacts of larger residential human populations on grizzly bears. Recreation, livestock grazing and sanitation issues on private land continue to create grizzly bear- human conflicts. Federal land management cannot entirely compensate for such impacts on private land. However, despite the recent growth of the human population the grizzly bear population in the ecosystem appears, by all reasonable measures, to be increasing as well.

VII. CONCLUSION

After reviewing the current status of the grizzly bear, the environmental baseline for the action area, the effects of the action and the cumulative effects, it is the Service's opinion that the effects of the continued implementation of the Butte RMP on grizzly bears that occur on the resource area outside the NCDE recovery zone are not likely to jeopardize the continued existence of the grizzly bear. No critical habitat has been designated for this species; therefore, none will be affected. Implementing regulations for section 7 (50 CFR 402) define "jeopardize the continued existence of" as to "engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species."

The Service concludes that grizzly bears living outside the recovery zone experience higher levels, in some areas considerably higher levels, of adverse affects from implementation of actions under the RMP than those bears living inside the recovery zone. However, new actions proposed under the Butte RMP serve to conserve grizzly bears and their habitat to varying degrees. As documented earlier, grizzly bears have apparently expanded their range during the past decade and now occur outside the recovery zone. Outside the recovery zone, grizzly bears occur more frequently in some areas within the distribution line than others. Female grizzly bears with young have been observed, leading to the assumption that females are able to establish home ranges and find the resources needed to survive and reproduce outside the recovery zone. Previous RMP direction apparently has been adequate to provide for a number of grizzly bears to exist outside the recovery zone, even though human-caused mortality risk is higher, as are other potential adverse effects.

The Service also concludes that adverse affects to grizzly bears may occasionally occur due to the BLM program direction for access management, sanitation/food storage and livestock grazing outside the recovery zone. The level of impact on BLM lands is not likely to become of serious consequence to the NCDE grizzly bear population.

- The best available information suggests the NCDE grizzly bear population is expanding its range. In part due to grizzly bear expansion into areas that had previously been unoccupied, the number of grizzly bear-human conflicts has increased. Much of the recent grizzly bear mortality is associated with conflicts arising from attractants on private lands. Many of the unprecedented number of conflicts in 2004 can be attributed to the huckleberry crop failure. Despite the recent growth of the human population and the associated increase in the number of grizzly bear-human conflicts and grizzly bear mortalities, the grizzly bear population in the ecosystem appears to be increasing as well (pers. comm. Manley 2005 *in* U.S. Forest Service 2005b). Preliminary population research results show that with 81 percent of the samples analyzed thus far, at least 471 known individual grizzly bears have been identified from samples obtained in the NCDE during 2004 (K. Kendall, USGS, unpublished 2006). Despite the recent years of increased grizzly bear mortality, the Service is cautiously optimistic regarding the NCDE grizzly bear population, based on the best information.

It is the Service's opinion that the level of open and total road densities, and security core areas, within the recovery zone adequately conserves effective grizzly bear habitat and promotes the recovery and survival of the NCDE grizzly bear population. Considering the status of grizzly bear habitat within the recovery zone, it is our opinion that the RMP direction for access management in the action area outside of the recovery zone does not appreciably reduce the likelihood of both the survival and recovery of grizzly bears.

- Inside the recovery zone road densities are moderate and core area is substantial.
- Additionally, the entire NCDE recovery zone contains large amounts of secure habitat and low total and open road densities in the majority of the subunits. For the subunits in the entire NCDE recovery zone that have greater than 75 percent Forest Service ownership, the mean secure habitat is 66.5 percent, the mean TMAD is 15.0 percent and the mean OMAD is 18.1 percent (U.S. Forest Service, 2004; 2005a; 2005b; U.S. Forest Service in litt., 2005;).
- High road density facilitates human access into grizzly bear habitats with a reasonable assumption that an increased frequency of human and bear encounters and adverse impacts to grizzly bears would result. Such high road densities in the action area outside the recovery zone may result in displacement of some grizzly bears. However, some grizzly bears are able to persist in areas with higher levels of human pressure, as documented by reports of grizzly bears, including females with cubs, outside of the recovery zone.
- It is expected that within the distribution of grizzly bears in the RMP area, road densities will be maintained below 1 mi/mi^2 or, in areas where they already exceed that standard, road densities will trend lower until that standard is met.
- In 2001, the OHV EIS decision (U.S. Bureau of Land Management and U.S. Forest Service 2001) closed BLM lands to off-route wheeled motorized travel, significantly reducing the acreage available to wheeled travel and resulting in an increase in grizzly bear secure habitat.
- Further, the Recovery Plan states that recovery zones include areas large enough and of sufficient habitat quality to support recovered grizzly bear populations, and that although grizzly bears are expected to reside in areas outside the recovery zones, only habitat within the recovery is to be managed primarily for grizzly bears.

It is the Service's opinion that the development of a food storage strategy as required by the RMP will contribute to the survival and recovery of the grizzly bear population. Lack of a mandatory food storage order in areas outside the recovery zone may result in grizzly bear-human conflicts and grizzly bear mortalities but this is not likely to jeopardize the survival and recovery of the NCDE grizzly bear population. We do not anticipate that the level of conflict and grizzly bear mortality occurring under RMP direction would increase to a level that would appreciably reduce the likelihood of both the survival and recovery of the grizzly bears.

- Although food conditioning may occur on private lands adjacent to BLM lands and the potential for adverse impacts to grizzly bears on BLM lands does exist, adoption of a food storage strategy as required by the RMP will further reduce the probability of conflicts in the future and no reported grizzly bear mortalities or management actions related to improper food storage have occurred on BLM lands within the action area.
- The BLM has made an effort to minimize adverse effects on grizzly bears as shown above through the RMP, past accomplishments, and current management direction and efforts to reduce adverse effects on grizzly bears due to food attractants are continuing.

RMP direction for livestock grazing may result in grizzly bear-human conflicts and grizzly bear mortalities but this will be minimized by the lack of sheep grazing allotments on BLM lands and will not affect survival and recovery of the NCDE grizzly bear population. We do not anticipate that the level of conflict and grizzly bear mortality occurring under RMP direction would increase to a level that would appreciably reduce the likelihood of both the survival and recovery of grizzly bears.

Recovery zones were established to identify areas necessary for the recovery of a species and are defined as the area in each grizzly bear ecosystem within which the population and habitat criteria for recovery are measured. Areas within the NCDE recovery zone are managed primarily for grizzly bear habitat. The NCDE recovery zone is an area adequate for managing and promoting the recovery and survival of the NCDE grizzly bear population (U.S. Fish and Wildlife Service, 1993). The recovery zone contains large portions of wilderness and national park lands, which are protected from the influence of many types of human uses occurring on lands elsewhere. As anticipated in the Recovery Plan, grizzly bears are expanding their range outside of the recovery zone. Grizzly bears outside the recovery zone probably experience a higher level of adverse impacts due to land management actions than do grizzly bears inside. Considering the large size of the NCDE, land management within the recovery zone, and the status of the grizzly bear population in the NCDE, we do not expect this level of adverse affects to appreciably reduce the likelihood of both the survival and recovery of the grizzly bear.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act, and Federal regulations pursuant to section 4(d) of the Act, prohibit the take of endangered and threatened species, respectively without special exemption. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as an intentional or negligent act or omission that creates the likelihood of injury to listed wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity.

Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with this Incidental Take Statement.

The measures described below are non-discretionary and must be undertaken by the BLM so that they become binding conditions of any grant or permit issued, as appropriate, for the exemption in section 7(o)(2) to apply. The BLM has a continuing duty to regulate the activity that is covered by this incidental take statement. If the BLM (1) fails to assume and implement the terms and conditions or (2) fails to require an applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. To monitor the impact of incidental take, the BLM must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50CFR 402.14(i)(3)].

This incidental take statement applies to the effects of access management, sanitation/food storage and livestock grazing under the implementation of the RMP.

Amount or Extent of Take Anticipated

The Service defines harm of grizzly bears in terms of adverse habitat conditions caused by high road densities. Significant avoidance of habitat by grizzly bears can occur when open motorized access density exceeds 1 mile per square mile and when total motorized access density exceeds 2 miles per square mile. The Service maintains that, as a result of access management under the RMP, this avoidance of otherwise suitable habitat constitutes incidental take of grizzly bears through "harm" as a result of significant habitat alteration that disrupts breeding, feeding and/or sheltering.

High road densities and lack of core or secure areas exist across many areas within the grizzly bear distribution area outside of the NCDE recovery zone. The RMP does not preclude additional road construction. The Service believes that it is reasonable to assume that the level of permanent roads in areas outside the recovery zone will not substantively increase in the next decade, with some local exceptions. This assumption is based on the commitments made in the proposed RMP, and the current BLM road system that in many cases is adequate for resource management.

Although a moving windows analysis has not been completed for access management in the action area, we have concluded that a degraded baseline exists based upon high open and total liner road densities and intense human use. Some construction of and motorized use of roads will result from site-specific projects under the RMP and would increase the likelihood of disturbance and displacement in the analysis area. Due to roads and activities in the project areas and new road construction and use allowed by the RMP, the Service anticipates that adverse effects to grizzly bears are likely to cause some low level of impairment of breeding, feeding or sheltering, especially during the spring period.

Under the RMP, temporary roads built for resource extraction such as timber harvest or mining may remain on the landscape for several years and receive a substantive amount of use. Such roads may also impair grizzly bears through displacement from key habitats. The Service expects that temporary roading will occur on lands within the distribution of grizzly bears on the resource area, outside the recovery zone. The Service also anticipates some level of impairment to grizzly bears with home ranges impacted by these temporary roads.

High road densities increase the risk of take of grizzly bears by habituating some individuals and displacing some individuals. However, habituation of grizzly bears is largely a function of private lands and or attractants. Human-caused mortality records for the BLM indicate that habituation on BLM lands is likely infrequent.

The continued implementation of the RMP and related access management would result in take due to displacement of grizzly bears, specifically female bears, from essential habitat. We expect take in the form of harm or harassment as a result of disturbance from roads or from alteration of habitat (high road densities) to the extent female bears significantly under-use important habitat. Such under-use of habitat likely leads to some level of impairment of normal breeding and feeding behavior in females. Significant levels of displacement from key habitats could result in a female bear's failure to obtain adequate food resources, which in turn could result in reduced fitness and either failure to breed or mortality of cubs prior to or after parturition. We do not expect adult or subadult grizzly bear mortality as a result of displacement. We do not expect mortality, injury, or significant impairment of breeding, feeding or sheltering of male or subadult grizzly bears as a result of displacement.

The effects of displacement of grizzly bears from key habitats are difficult to quantify and may be measurable only as long-term effects on the species' habitat and population levels. We believe that incidental take will occur from the effects of high road densities persisting in some areas of the resource area, outside of the recovery zone. However, grizzly bears are individualistic and display a wide variation in their tolerance of and response to human activity and road density. The best scientific and commercial data available at this time are not sufficient to enable the Service to determine a specific amount of incidental take of the grizzly bears due to displacement. The reasons for this difficulty are in part based on the lack of ongoing, intensive grizzly bear research. We lack information related to the following:

- the number of grizzly bears living on the resource area
- the individual response of adult females whose home range encompasses areas with high road densities
- demographic parameters, such as survivorship and fecundity
- detection of loss of cubs prior to or after parturition

The level of take is also difficult to detect. Failure to breed, or loss of cubs prior to or after parturition is exceedingly difficult to detect, and the reasons for such are exceedingly difficult to discern. Therefore, in such cases where take is difficult to enumerate, the Service uses surrogate measures to gauge the level of take. The best available information indicates that female grizzly bears display significant under-use of habitat near roads and areas of high road densities. Research provided a composite home range for female grizzly bears that survived to adulthood to successfully produce cubs. From this home range information, the surrogate measures of OMAD, TMAD and security core were derived to limit, measure and monitor the displacement impacts and resulting level of incidental take. In the action area outside of the recovery zone, based on recent past and planned future BLM projects, we assume that there will be increases in road densities associated with specific projects. These increases will generally be temporary, and post-project road densities will not diverge significantly from the present. This level of roading represents the surrogate measure to limit the take we anticipate from continued implementation of the RMP in regards to access management in the action area outside of the recovery zone.

A food storage strategy will be developed for the resource area. This strategy will further reduce the already low probability of food conditioning of grizzly bears on BLM lands. The BLM has not had any reports of grizzly bear mortalities or management actions towards grizzly bears associated with improper food storage.

The Service concludes that the lack of a mandatory sanitation and food storage requirements across the entire action area outside of the recovery zone may contribute to the habituation of grizzly bears and modification of natural feeding behavior and the resulting removal or death of grizzly bears due to necessary management removal and other human-caused mortality. Until a resource area-wide food storage order is in place, the potential for grizzly bears to have access and become habituated to improperly stored food items on the resource area will persist. Thus, the potential for incidental take of grizzly bears through habituation and food conditioning will remain.

Based on recent trends in grazing, we assume there will be no establishment of sheep grazing allotments on lands managed by BLM. If additional sheep, and to a lesser extent cattle, allotments are filled in areas outside the recovery zone, the level of conflicts may increase and the risk of adverse impacts to grizzly bears does exist. Of most concern are the allotments that become attractants for grizzly bears living both in and outside the recovery zone, and result in grizzly bear mortality sinks. An attractant such as a sheep allotment outside the recovery zone may draw bears from within the recovery zone and affect recovery of the NCDE grizzly bear population. However, there have been no management removals or mortalities of grizzly bears on BLM lands in the Butte resource area due to grazing conflicts.

Although no grizzly bear mortality or management actions have occurred in the action area related to sanitation/food storage or livestock grazing, the Service assumes that the risk for such is likely to increase as grizzly bears continue to expand outside the recovery zone.

We anticipate that no more than one grizzly bear will be removed from the action area for management purposes related to authorizations made under the RMP during any ten year period related to sanitation/food storage and/or livestock grazing. Therefore, should more than one grizzly bear be taken incidentally in the action area as a result of authorizations made under the RMP related to sanitation/food storage and/or livestock grazing during any ten year period, the BLM must reinitiate consultation with the Service. Additionally, should the level of incidental take associated with the RMP reach, but not exceed, the anticipated incidental take level, the BLM should informally consult with the Service regarding the adequacy of existing mechanisms to minimize potential take.

Effect of the Take

In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy to the species. The BLM is implementing several measures that would sufficiently minimize impacts to grizzly bears. See the proposed action and "Positive Actions toward Grizzly Bear Recovery on the resource area" (above) in the accompanying biological opinion for a list of these measures. Critical habitat has not been designated for the grizzly bear; therefore none would be affected.

Reasonable and Prudent Measures

Biological opinions provide reasonable and prudent measures that are expected to reduce the amount of incidental take. Reasonable and prudent measures are those measures necessary and appropriate to minimize incidental take resulting from proposed actions. Reasonable and prudent measures are nondiscretionary and must be implemented by the agency in order for the exemption in section 7(o)(2) to apply.

The Service believes that the measures displayed in the accompanying biological opinion, specifically in the proposed action and under "Positive Actions toward Grizzly Bear Recovery on the resource area", direction provided in the proposed Preferred Alternative in the RMP the commitment to develop food storage guidelines, and administrative direction on livestock grazing, minimize adverse effects to grizzly bears within the action area. The following reasonable and prudent measure is also necessary and appropriate to minimize the impacts of incidental take resulting from the proposed action:

1. Reduce the potential for mortality and displacement of grizzly bears within the mapped distribution area for grizzly bears on the resource area outside of the NCDE recovery zone.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, the BLM must comply with the following terms and conditions that implement the reasonable and prudent measure described above and outline reporting and monitoring requirements. These terms and conditions are non-discretionary:

To implement the reasonable and prudent measure:

1. ***BLM will include a clause in all new and revised grazing permits for allotments within the grizzly bear distribution area (U.S. Forest Service, 2002), requiring the permittee to notify the BLM as soon as is practical of any grizzly bear depredation on livestock or conflicts between grizzly bears and livestock, even if the conflict does not result in the loss of livestock. The BLM shall coordinate with Montana Fish, Wildlife and Parks (FWP) and USDA APHIS Wildlife Services personnel to determine appropriate action.***
2. ***BLM will include a clause in all new and revised grazing permits for the area within the grizzly bear distribution line (U.S. Forest Service, 2002) requiring the permittee to properly treat or dispose of livestock carcasses as deemed necessary on a case-by-case basis by BLM in coordination with USFWS, so as to eliminate any potential attractant for bears. BLM will include guidance to permittees to contact FWP if they need carcass disposal assistance.***

Reporting Requirements

3. ***The BLM will maintain an up-to-date record of the grizzly bear conflicts and management actions that occur on lands managed by the Butte Field Office. "Conflict" is defined by the IGBC (1986) as "a confrontation between man and/or his property and bear(s) in which the safety of man and/or bear(s) is jeopardized and/or property loss occurs." This information shall be submitted to the Service's Montana Field Office in written form annually by June 1 for the preceding calendar year.***
4. ***The BLM shall notify the Service's Montana Field Office if a change in the status of sheep grazing on the resource area is being considered if the change could increase sheep grazing in or adjacent to occupied grizzly bear habitat. Changes that increase sheep grazing include increased sheep AUMs in established allotments or conversion of cattle allotments to sheep.***
5. ***The BLM shall notify the Service's Montana Field Office, within 72 hours of discovery of any livestock depredation by grizzly bears, grizzly bear-human conflict resulting from improper storage of food or attractants or the management removal or human-caused death of a grizzly bear.***

Closing Statement

The Service is unable to precisely quantify the number of grizzly bears that will be incidentally taken as a result of the implementation of the Butte RMP. Based on the commitments made in the RMP we anticipate that adverse effects of BLM actions will continue to decrease over the life of the plan. We also anticipate that no more than one grizzly bear will be removed from the resource area as a result of authorizations made under the RMP related to sanitation/food storage and/or livestock grazing in any ten-year period. Reasonable and prudent measures, with their implementing terms and conditions, are typically designed to minimize the impact of incidental take that might otherwise result from the proposed action. If, during the course of the action, the Service believes that the level of take occurring exceeds that anticipated in this incidental take statement, such incidental take represents new information requiring reinitiation of consultation and review of the incidental take statement. The federal agency must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

CONSERVATION RECOMMENDATIONS

Sections 7(a)(1) of the Act directs federal agencies to use their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans or to develop information. The recommendations provided here relate only to the proposed action and do not necessarily represent complete fulfillment of the agency's section 7(a)(1) responsibility for the species.

1. Participate in ongoing interagency efforts to identify, map and manage linkage habitats essential to grizzly bear movement between ecosystems. Much of the resource area may be an important link to the Bitterroot Ecosystem, Bitterroot National Forest, the Beaverhead-Deerlodge National Forest, the Helena National Forest, and the Yellowstone ecosystem. Please contact the Service's grizzly bear recovery coordinator at (406) 243-4903 or Montana Fish, Wildlife and Parks for information.
2. Continue to manage access on the resource area to achieve lower road densities. By managing motorized access, several grizzly bear management objectives could be met including: 1) minimize human interaction and potential grizzly bear mortality; 2) minimize displacement from important habitats; 3) minimize habituation to

humans; and 4) provide relatively secure habitat where energetic requirements can be met (Interagency Grizzly Bear Committee 1998). Additionally, lower road densities would also benefit other wildlife and public resources. Lower road densities may result in lower maintenance costs that free up funding for other resource needs.

3. Grizzly bears concentrate in certain areas during specific time periods to take advantage of concentrated food sources or because the area provides a high seasonal food value due to diversity in vegetation and plant phenology (e.g., important spring or fall range). Where grizzly bear use is known or likely to occur and where practicable, delay disturbing activities during the spring in spring habitats to minimize displacement of grizzly bears.

REINITIATION NOTICE

This concludes consultation on the action outlined in your May 25, 2006 request for consultation on the effects of the Butte RMP on grizzly bears. As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

The incidental take statement is based on the implementation of the RMP management activities, including the minimization measures described in the biological assessment, the RMP, special orders and administrative decisions; as well as effects analysis of this biological opinion. To ensure protection for a species for which surrogate measures are used to gauge the level of take due to activities related to the continued implementation of RMP activities, reinitiation may be required if the terms and conditions are not adhered to or the magnitude of the proposed activities exceed the scope of this biological opinion. Determination of reinitiation of consultation pursuant to the Act will depend upon the nature and extent of noncompliance with the implementation of RMP activities, and the terms and conditions of this incidental take statement, and may result in loss of take exemption from the prohibitions of section 9 of the Act.

Thank you for your continued assistance in the conservation of endangered, threatened, and proposed species. If you have any questions or comments on this biological opinion, please contact myself or Anne Vandehey of my staff at 406-449-5225.

Sincerely,

R. Mark Wilson
Field Supervisor

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APPENDIX H – RECREATION OPPORTUNITY SPECTRUM CLASSES

Defining recreation opportunities is used as a tool to help recreation managers create and maintain the appropriate recreation experiences that suits various types of land and visitors. The ROS continuum characterizes recreation opportunities in terms of setting, activity, and experience. The spectrum contains six classes: primitive, semi-primitive non-motorized, semi-primitive motorized, roaded natural, roaded modified, rural, and urban.

ROS	Class Descriptions
Primitive	Opportunity for isolation from man-made sights, sounds, and management controls in an unmodified natural environment. Only facilities essential for resource protection are available. A high degree of challenge and risk are present. Visitors use outdoor skills and have minimal contact with other users or groups. Motorized use is prohibited.
Semi-primitive non-motorized	Some opportunity for isolation from man-made sights, sounds, and management controls in a predominantly unmodified environment. Opportunity to have a high degree of interaction with the natural environment, to have moderate challenge and risk and to use outdoor skills. Concentration of visitors is low, but evidence of users is often present. On-site managerial controls are subtle. Facilities are provided for resource protection and the safety of users. Motorized use is prohibited.
Semi-primitive motorized	Some opportunity for isolation from man-made sights, sounds, and management controls in a predominantly unmodified environment. Opportunity to have a high degree of interaction with the natural environment, to have moderate challenge and risk and to use outdoor skills. Concentration of visitors is low, but evidence of other area users is present. On-site managerial controls are subtle. Facilities are provided for resource protection and the safety of users. Motorized use is permitted.
Roaded Natural	Mostly equal opportunities to affiliate with other groups or be isolated from sights and sounds of man. The landscape is generally natural with modifications moderately evident. Concentration of users is low to moderate, but facilities for group activities may be present. Challenge and risk opportunities are generally not important in this class. Opportunities for both motorized and non-motorized activities are present. Construction standards and facility design incorporate conventional motorized uses.
Roaded Modified	Similar to the Roaded Natural setting, except this area has been heavily modified (roads or recreation facilities). This class still offers opportunity to have a high degree of interaction with the natural environment and to have moderate challenge and risk and to use outdoor skills.
Rural	Area is characterized by a substantially modified natural environment. Opportunities to affiliate with others are prevalent. The convenience of recreation sites and opportunities are more important than a natural landscape or setting. Sights and sounds of man are readily evident, and the concentration of users is often moderate to high. Developed sites, roads, and trails are designed for moderate to high uses.
Urban	Area is characterized by a substantially urbanized environment, although the background may have natural-appealing elements. High levels of human activity and concentrated development, including recreation opportunities are prevalent. Developed sites, roads and other recreation opportunities are designed for high use.

APPENDIX I – AREAS OF CRITICAL ENVIRONMENTAL CONCERN

US Department of the Interior

Bureau of Land Management
Butte Field Office, Montana

March 2006

Butte Resource Management Plan

Final Report on Importance and Relevance Criteria and Findings for Areas of Critical Environmental Concern Considerations

Prepared for:

US Department of Interior, Bureau of Land Management
106 North Parkmont
Butte, Montana 59701

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LIST OF ACRONYMS

Acronym or Abbreviation	Full Phrase
ACEC	Area of Critical Environmental Concern
BLM	United States Department of the Interior, Bureau of Land Management
FLPMA	Federal Land Policy and Management Act
Forest Service	United States Department of Agriculture, Forest Service
MOU	memorandum of understanding
Planning Area	Butte Resource Management Plan planning area
RMP	resource management plan
US	United States
WSA	Wilderness Study Area

IMPORTANCE AND RELEVANCE CRITERIA AND FINDINGS FOR AREAS OF CRITICAL ENVIRONMENTAL CONCERN CONSIDERATIONS

1. EXECUTIVE SUMMARY

As part of the land use planning process for the Butte Resource Management Plan (RMP), a US Department of the Interior, Bureau of Land Management (BLM) interdisciplinary team reviewed ten nominations for special designation as Areas of Critical Environmental Concern (ACECs). Five nominations were external (made by other agencies or the public), three were internal (made by BLM specialists), one was recommended for study in a 1979 BLM management plan (BLM 1979), and one is an existing ACEC. The team analyzed the ten areas to determine if they contain values that meet the relevance and importance criteria for consideration as potential ACECs.

Five areas were found to meet the relevance and importance criteria: Elkhorn Mountains, the existing Sleeping Giant ACEC, Spokane Creek, Ringing Rocks, and Humbug Spires. These areas are identified as potential ACECs. Various alternatives in the Draft RMP will recommend the areas for designation as ACECs (or continued designation in the case of Sleeping Giant ACEC) if special management is required to protect the relevant and important values. Areas found not to meet the relevance and importance criteria are not carried forward as potential ACECs.

2. INTRODUCTION

The Federal Land Policy and Management Act (FLPMA) and BLM policy (Manual 1613 [USDI-BLM 1988a]) require the BLM to give priority to the designation and protection of ACECs during the land use planning process. The BLM, Butte Field Office, is currently revising its older land use plans, the Headwaters RMP (BLM 1984) and the Dillon Management Framework Plan (BLM 1979). The revised RMP will provide a single, comprehensive land use plan that will guide management of public land administered by the Butte Field Office over the next 15 to 20 years. Only that public and federal mineral estate managed by BLM within the Butte Field Office boundary is the subject of this document.

The BLM Butte Field Office Planning Area is in mid-western Montana (**Figure 1**). Within the Planning Area, BLM administers about 307,300 acres of public surface land and 652,000 acres of federal mineral estate in Lewis and Clark, Jefferson, Broadwater, Deer Lodge, Beaverhead, Silver Bow, Gallatin, and Park Counties.

This analysis and the resultant findings for ACEC relevance and importance criteria has been performed pursuant to FLPMA Section 202 (43 US Code 1712[c][3]), 43 Code of Federal Regulations 1610.7-2 and BLM Manual 1613 (BLM 1988a).

2.1 What is an Area of Critical Environmental Concern?

FLPMA Section 103 (43 US Code 1702[a]) and 43 Code of Federal Regulations 1601.0-5(a) describes ACECs as "areas within the public lands where special management attention is required to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards." Therefore, only BLM-administered lands are included in ACEC boundaries.

Designation of an ACEC in and of itself does not automatically prohibit or restrict other uses in the area. The one exception is that a mining plan of operation is required for any proposed mining activity within a designated ACEC. The ACEC designation is an administrative designation that is accomplished through the land use planning process. It is unique to BLM in that no other agency uses this form of designation.

The intent of Congress in mandating the designation of ACECs through FLPMA was to give priority to the designation and protection of areas containing unique and significant resource values. The BLM staff followed guidance set forth in BLM Manual 1613 for the process of identifying and evaluating potential ACECs. This report documents the first three steps in the process: compiling a list of areas recommended for ACEC designation, obtaining information on relevance and importance, and evaluating each resource or hazard to determine if it meets both the relevance and importance criteria. The remaining two steps, public comment on proposed ACECs and ACEC designation, will be completed after publishing this draft report. Section 3 describes these steps.

3. STEPS IN THE ACEC PROCESS

This section summarizes the five main steps in the identification and evaluation of ACECs.

3.1 Nomination

BLM staff, other agencies, or members of the public may nominate ACECs at any time, but they are only designated during the BLM land use planning process. External nominations from agencies and the public generally are solicited during an RMP's scoping process. In addition, BLM regulations require reconsideration of existing ACECs during RMP revision (BLM 1988a).

3.2 Evaluation of Nominations for Relevance and Importance

Each nominated area is evaluated to determine if it meets the relevance and importance criteria listed in BLM Manual 1613. A nomination must meet one or more of the relevance criteria *and* the importance criteria to be considered a potential ACEC.

Relevance Criteria

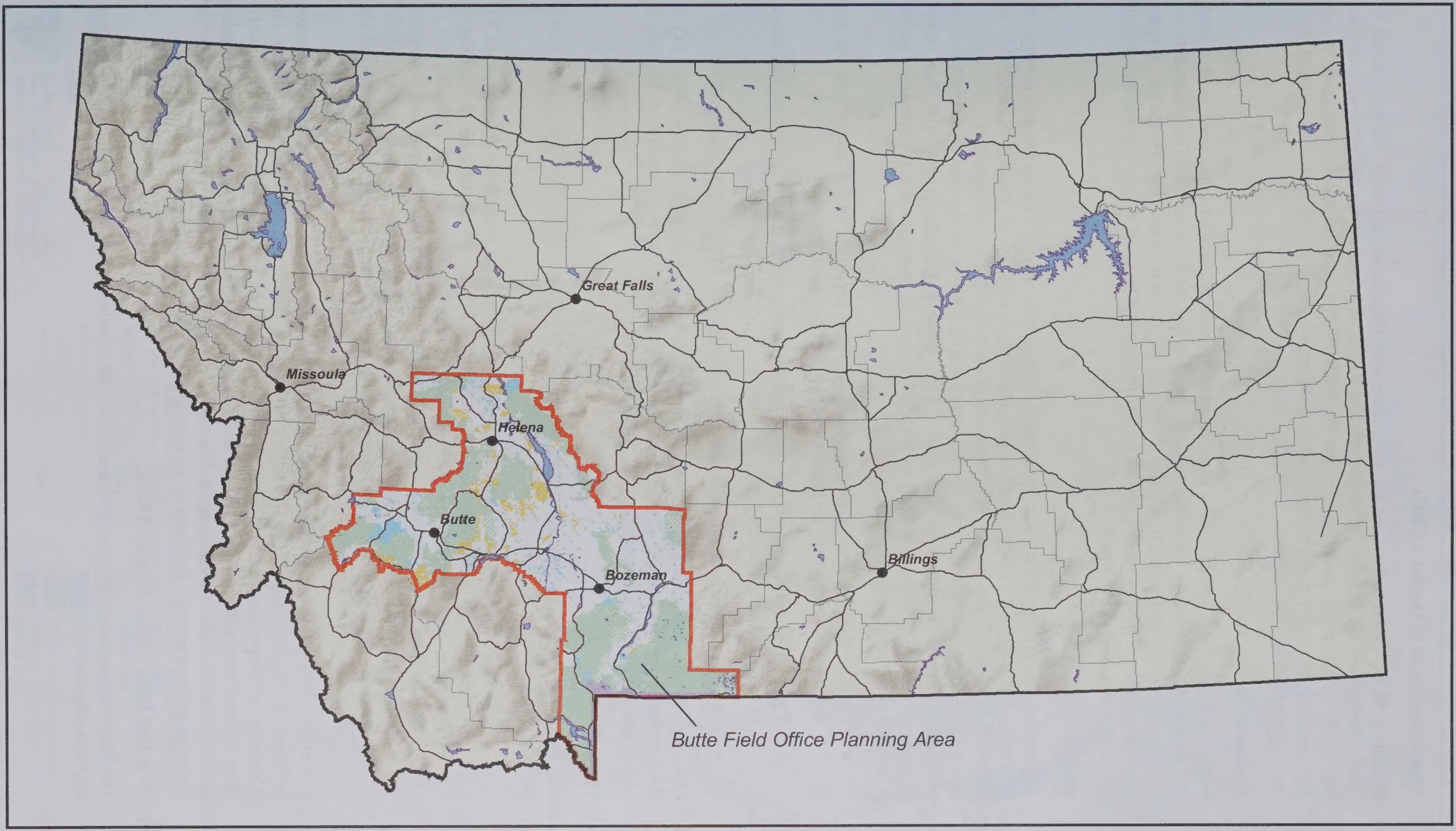
Does the area contain one or more of the following values?

1. A significant historic, cultural, or scenic value (including but not limited to rare or sensitive archeological resources and religious or cultural resources important to native Americans);
2. A fish or wildlife resource (including but not limited to habitat for endangered, sensitive, or threatened species, or habitat essential for maintaining species diversity);
3. A natural process or system (including but not limited to endangered, sensitive, or threatened plant species; rare, endemic, or relict plants or plant communities that are terrestrial, aquatic, or riparian; or rare geological features); and/or
4. A natural hazard (including but not limited to areas of avalanche, dangerous flooding, landslides, unstable soils, seismic activity, or dangerous cliffs). A hazard caused by human action may meet the relevance criteria if it is determined through the RMP process that it has become part of a natural process.

Importance Criteria

Does the value, resource, system, process, or hazard have substantial significance or value? Does it meet one or more of the following criteria?

1. Does it have more than locally significant qualities that give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource?
2. Does it have qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change?
3. Has it been recognized as warranting protection in order to satisfy national priority concerns or to carry out the mandates of FLPMA?
4. Does it have qualities that warrant highlighting in order to satisfy public or management concerns about safety and public welfare?
5. Does it pose a significant threat to human life and safety or property?



Great Falls
Missoula
Helena
Butte
Bozeman
Billings
Butte Field Office Planning Area
0
Miles
60

FIGURE 1

Butte RMP Planning Area, Montana
BLM, Butte Field Office
Butte RMP and EIS

No warranty is made by the Bureau of Land Management (BLM) for use of data for purposes not intended by BLM.

3.3 Consideration of Potential ACECs

Potential ACECs (those meeting the relevance and importance criteria) are considered as RMP alternatives are developed. Each potential ACEC is proposed for designation in at least one of the management alternatives in the Draft RMP. The need for special management and the resulting effects from applying such management are assessed in the associated draft environmental impact statement.

3.4 Comment on Proposed ACECs

Public feedback will be sought on the designation recommendations included in this draft report, and the public may comment on any aspect of the ACEC analysis. The comments are considered during preparation of the Proposed RMP and Final Environmental Impact Statement. After a 30-day protest period on the Proposed RMP, the BLM prepares a record of decision and approves the RMP.

3.5 Designation

A potential ACEC is proposed for designation if it requires special management to protect the important and relevant values. Special management is defined as management outside of standard or routine practices. Special management refers to management prescriptions developed expressly to protect the important and relevant values of the area from the potential effects of actions permitted by the RMP. They usually include more detail than other management prescriptions contained in the RMP. Special management is typically needed when one of the following conditions is met:

- Current management or management activities proposed in the alternative are not sufficient to protect the relevant and important resource values;
- The needed management action is considered unusual or outside of the normal range of management practices typically used; or
- The change in management is difficult to implement without ACEC designation.

Only if analysis determines that special management is required, the potential ACEC is recommended for designation. Designation of ACECs occurs when the record of decision is signed and the RMP is approved.

4. NOMINATIONS

For the Butte RMP process, the notice of intent to prepare the RMP (December 2003) included the following request for nominations:

> “The BLM is … requesting public input for nominations considered worthy of ACEC designation. To be considered as a potential ACEC, an area must meet the criteria of relevance and importance as established and defined in 43 CFR 1610.7-2. Nominations must include descriptive materials, detailed maps, and evidence supporting the ‘relevance’ and ‘importance’ of the resource or area. … All ACEC nominations within the planning area will be evaluated during development of the RMP” (Federal Register 2003).

The BLM received five external nominations from four different sources. Each nomination included a varying degree of descriptive materials, maps, and evidence supporting the relevance and importance of each area. In addition, the BLM interdisciplinary team evaluated three internal nominations, one existing ACEC (Sleeping Giant), and one area recommended for study in the Dillon Management Framework Plan (BLM 1979). **Figure 2** depicts the locations of the ten areas. Evaluations of each area are provided below.

5. IMPORTANCE AND RELEVANCE EVALUATIONS

The following information describes each area and whether or not it meets the relevance and importance criteria.

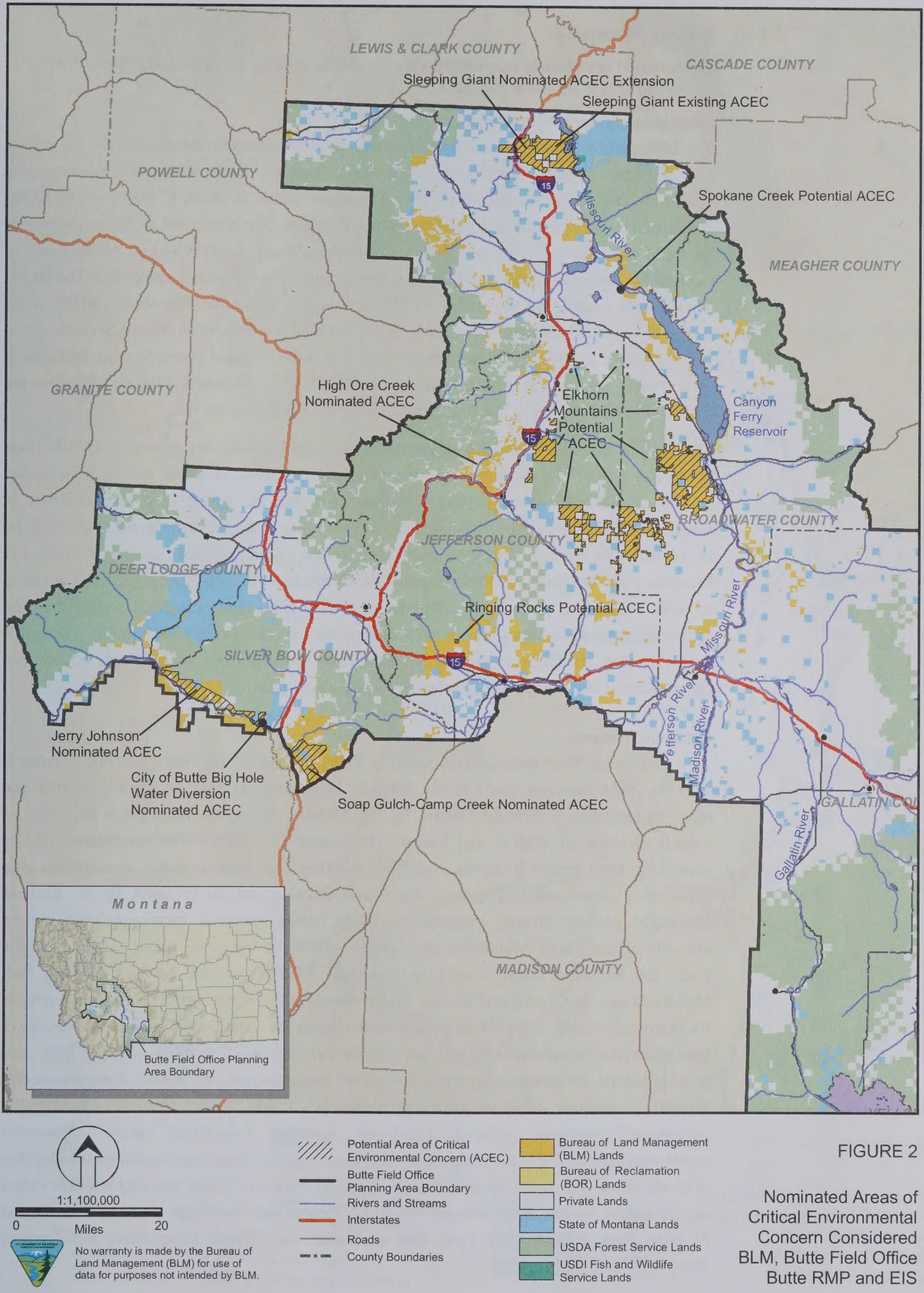

LEWIS & CLARK COUNTY
CASCADE COUNTY
Sleeping Giant Nominated ACEC Extension
Sleeping Giant Existing ACEC
POWELL COUNTY
15
Missouri River
Spokane Creek Potential ACEC
MEAGHER COUNTY
GRANITE COUNTY
High Ore Creek
Nominated ACEC
Elkhorn
Mountains
Potential
ACEC
Canyon
Ferry
Reservoir
BROADWATER COUNTY
JEFFERSON COUNTY
DEER LODGE COUNTY
Ringing Rocks Potential ACEC
SILVER BOW COUNTY
Missouri River
Jefferson River
Madison River
Jerry Johnson
Nominated ACEC
City of Butte Big Hole
Water Diversion
Nominated ACEC
Soap Gulch-Camp Creek Nominated ACEC
GALLATIN CO
Gallatin River
MADISON COUNTY
Montana
Butte Field Office Planning
Area Boundary
1:1,100,000
0
Miles
20
No warranty is made by the Bureau of
Land Management (BLM) for use of
data for purposes not intended by BLM.
Potential Area of Critical
Environmental Concern (ACEC)
Butte Field Office
Planning Area Boundary
Rivers and Streams
Interstates
Roads
County Boundaries
Bureau of Land Management
(BLM) Lands
Bureau of Reclamation
(BOR) Lands
Private Lands
State of Montana Lands
USDA Forest Service Lands
USDI Fish and Wildlife
Service Lands

FIGURE 2

Nominated Areas of
Critical Environmental
Concern Considered
BLM, Butte Field Office
Butte RMP and EIS

5.1 Elkhorn Mountains

This external nomination was made during the public scoping process for the Butte RMP. The nominated area is shown in **Figure 3**.

Description of Area/Nomination

The Elkhorn Mountains are an island mountain range in southwest Montana, near the capital city of Helena. The communities of Townsend, Boulder, Three Forks, and Winston also border the range. The nominated Elkhorn Mountains ACEC is about 67,500 acres of BLM-administered lands in Jefferson and Broadwater Counties. The nominated ACEC encompasses the BLM-administered 3,575-acre Elkhorn Wilderness Study Area (WSA) on the west side of the Elkhorn Mountains; this WSA has not been studied for wilderness suitability. The BLM-administered lands in the nominated ACEC encircle (but do not include) about 160,000 acres managed by the US Department of Agriculture, National Forest Service (Forest Service); these lands comprise the only Wildlife Management Unit in the National Forest System. Included in these Forest Service lands, and adjacent to the BLM-administered Elkhorn WSA, is the 64,522-acre Elkhorn WSA that is administered by the US Forest Service.

The wildlife emphasis resulted from the decision on the Elkhorns Wilderness Study EIS done in the late 1970s. The study was controversial, and the public response was both vocal and conflicting. Throughout the debate, consensus emerged: the wealth of natural diversity in wildlife and habitats and the associated recreation values of the Elkhorn Mountains should be recognized and retained. In 1992, the BLM, Helena and Deerlodge National Forests, and Montana Fish, Wildlife, and Parks signed a Memorandum of Understanding (MOU) agreeing to work together to manage the Elkhorns as a mountain range. The MOU established the Elkhorn Cooperative Management Area as a unique, cooperatively administered geographic area. However, the BLM-managed lands have remained under full multiple use, whereas the Forest Service lands emphasize wildlife and recreation values.

Relevance Criteria

This area meets Relevance Criteria 1 and 2. There are significant Native American cultural sites on BLM-managed lands in the Elkhorn Mountains, as well as historic mining and ranching localities (Relevance Criteria 1). The Elkhorn Mountains' highlight is its wealth of natural diversity in wildlife and habitats (Relevance Criteria 2). The ecosystem includes everything from prairie to alpine, and from mayflies *(Ameletus bellulus)* to mountain goat *(Oreamnos americanus)*. Together, the Forest Service and BLM lands in the Elkhorn Mountains provide diverse, productive wildlife habitat essential for maintaining species diversity. The Elkhorn Mountains also provide expansive big game winter range on public land. The mountain range is also an important wildlife corridor between the Big Belt Mountains and the Continental Divide. The lower-elevation portion of the ecosystem includes BLM-managed lands that provide critical winter range for mule deer *(Odocoileus hemionus)*, pronghorn *(Antilocapra americana)*, and elk *(Cervus elaphus)*. The BLM-managed lands also provide habitat for mountain plover *(Charadrius montanus)* and for several sensitive species including westslope cutthroat trout *(Oncorhynchus clarki lewisi)*, golden eagle *(Aquila chrysaetos)*, northern goshawk *(Accipiter gentilis)*, long-billed curlew *(Numenius americanus)*, black-backed woodpecker *(Picoides arcticus)*, American three-toed woodpecker *(Picoides dorsalis)*, and Brewer's sparrow *(Spizella breweri)*. These fish and wildlife values are recognized by the MOU between the BLM, Helena and Deerlodge National Forests, and Montana Fish, Wildlife, and Parks that establishes the Elkhorn Cooperative Management Area.

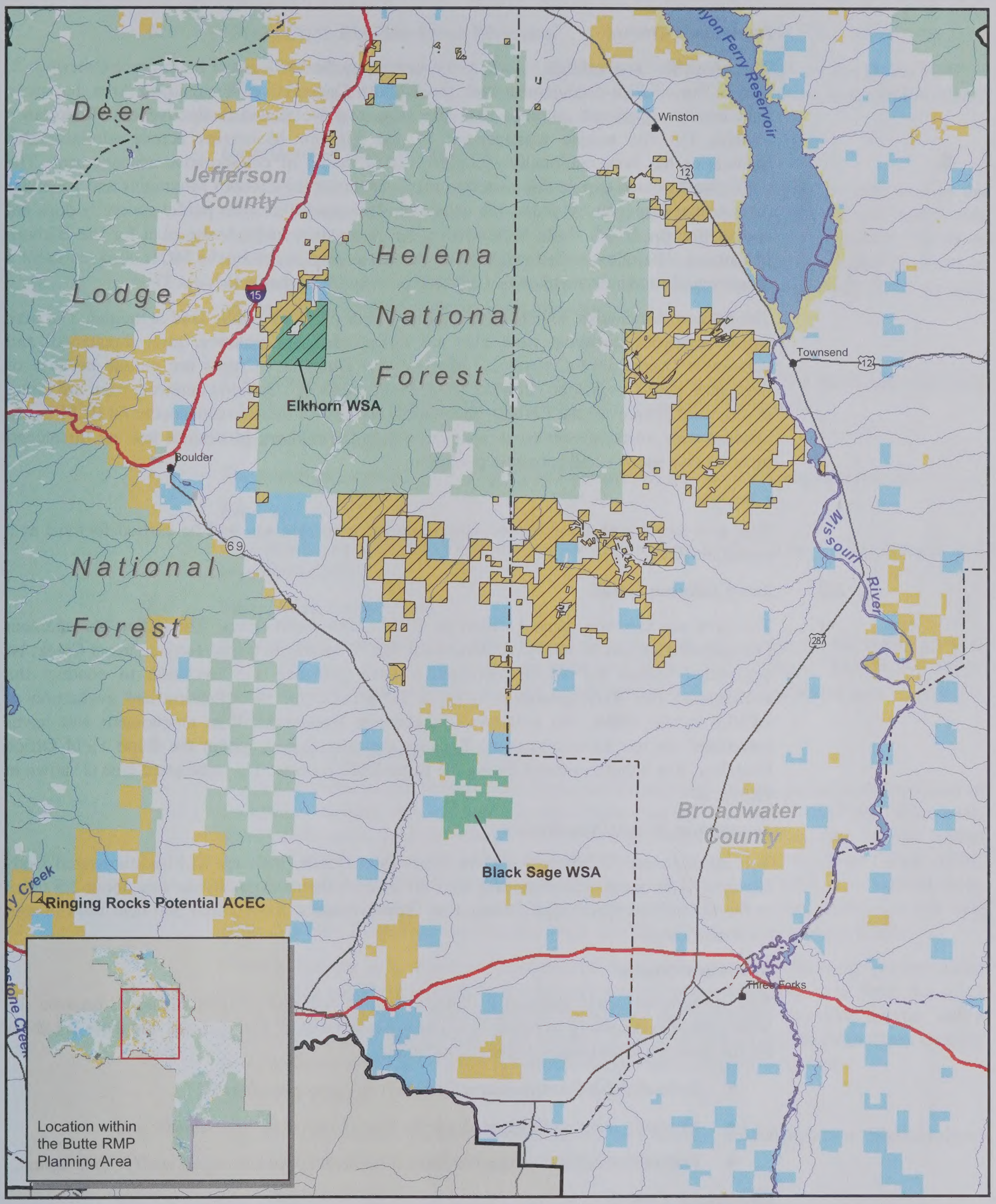

Deer
Lodge
National
Forest
Jefferson County
Helena
National
Forest
Canyon Ferry Reservoir
Winston
12
15
Townsend
Elkhorn WSA
Boulder
69
Missouri River
287
Broadwater County
Black Sage WSA
Creek
Ringing Rocks Potential ACEC
Three Forks
Location within the Butte RMP Planning Area
1:401,462
0 Miles 5
No warranty is made by the Bureau of Land Management (BLM) for use of data for purposes not intended by BLM.
Wilderness Study Area (WSA)
Potential Area of Critical Environmental Concern (ACEC)
Butte Field Office Planning Area Boundary
Rivers and Streams
Interstates
Roads
County Boundaries
Bureau of Land Management (BLM) Lands
Bureau of Reclamation (BOR) Lands
Private Lands
State of Montana Lands
USDA Forest Service Lands
USDI Fish and Wildlife Service Lands

FIGURE 3

Location of Potential Area of Critical Environmental Concern Elkhorn Mountains BLM, Butte Field Office Butte RMP and EIS

Importance Criteria

This area's fish and wildlife values, as recognized by the MOU, meet Importance Criteria 1, 2, and 3. The wildlife management unit, the Elkhorn Cooperative Management Area, has more than locally significant qualities that give it special worth and distinctiveness (Importance Criteria 1). The unique management of the Elkhorn Mountains across administrative boundaries has been nationally recognized as a model of collaborative management. The public has come to expect this seamless management of the Elkhorn Mountains and generally expects that management across the ecosystem favors wildlife. The public generally does not realize that the BLM, Butte Field Office, has a separate multiple-use plan for the Elkhorn Mountains. The relevant fish and wildlife values, as recognized by the MOU, also represent a unique wildlife management unit of national priority (Importance Criteria 3).

The Elkhorn Mountains' expansive big game winter range on public land is unique. The pure native westslope cutthroat trout also are unique, fragile, sensitive, rare, threatened, and vulnerable (Importance Criteria 2). Muskrat and Dutchman Creeks are unique because of these pure native westslope cutthroat trout. Pure strains of westslope cutthroat trout are found in only four streams of the Elkhorn Mountains, and two of these streams occur on BLM lands. Streams with westslope cutthroat trout are rare in the Elkhorn Mountains and are threatened by nonnative species and habitat degradation.

Findings

This area meets both the relevance and importance criteria and will be carried forward as a potential ACEC.

5.2 Jerry Johnson Creek

This area was formerly located within the BLM Dillon Field Office. The Dillon Management Framework Plan (BLM 1979) recommended that 15 areas, including Jerry Johnson Creek, be considered further for ACEC designation once guidance was available to conduct the evaluations. The BLM guidance finalized the process for identification and evaluation of ACECs in the 1980s, but a Dillon Management Framework Plan amendment was never completed for the 15 nominations. Because the area is now within the Butte Field Office boundary, it is being evaluated during the Butte RMP process. The nominated area is shown in **Figure 2**.

Description of Area/Nomination

This approximate 12,100-acre area in Silver Bow County includes BLM-administered lands adjacent to the north side of the Big Hole River from the town of Divide west about 2.5 miles to the Silver Bow-Deerlodge County line. Approximately 200 elk and 300 deer use the area for winter range.

Relevance Criteria

This nomination meets Relevance Criteria 2 for a fish and wildlife resource, because the winter range is necessary to maintain existing populations of deer and elk, and there is habitat for threatened and endangered species, including:

- Federally listed as threatened Canada lynx *(Lynx canadensis)*;
- Federally listed as threatened grizzly bear *(Ursus arctos horribilis);* and
- Federally listed as endangered and experimental population gray wolf *(Canis lupus).*

Importance Criteria

The small area does not meet the importance criteria for a fish and wildlife resource. Though it contains threatened and endangered species habitat, there is nothing more than locally significant about this area, as these species occur elsewhere in Montana.

Findings

This nomination meets the relevance criteria for a fish and wildlife resource but does not meet importance criteria. As such, it will not be carried forward as a potential ACEC.

5.3 City of Butte Big Hole River Diversion

This external nomination was made during the public scoping process for the Dillon RMP in 2001. Because it is located in the Butte Field Office, it was not considered in the Dillon ACEC evaluation. The nominated area is shown in **Figure 2**.

Description of Area/Nomination

The City of Butte Big Hole River Diversion is on the Big Hole River one mile west of the town of Divide, in Silver Bow County. This nomination stated that all municipal watersheds should be considered as ACECs because they have immediate and important effects to humans. The description of this nomination was not adequate to determine exact locations or total acres of public lands. The nominator did not participate in the Butte RMP scoping process, so additional information was not solicited.

Relevance Criteria

This nomination does not meet any of the four relevance criteria. The municipal watershed does not have significant historic or cultural value (Relevance Criteria 1).

Importance Criteria

The importance criteria were not reviewed because the relevance criteria were not met.

Findings

This nomination does not meet any relevance criteria and will not be carried forward as a potential ACEC.

5.4 Soap Gulch-Camp Creek

This external nomination was made during the public scoping process for the Dillon RMP in 2001. The area is split between the Butte and Dillon Field Offices. The Dillon ACEC evaluation considered portions on Dillon Field Office lands. The nominated area is shown in **Figure 2**.

Description of Area/Nomination

This habitat area is split between the Butte and Dillon Field Offices and is north/northeast of the town of Melrose in Silver Bow County. The nominated area in the Butte Field Office totals about 9,300 acres. Bighorn sheep *(Ovis canadensis)* were reintroduced into historic habitat around Camp Creek in the mid-1960s and served as the basis for the Soap Gulch ACEC nomination in the 1979 Dillon Management Framework Plan (BLM 1979). The bighorn sheep population has expanded to occupy suitable habitat around this core area, including lands west of the Big Hole River (Melrose-Maiden Rock ACEC nomination in the Dillon RMP).

Wildlife viewing is a major regional interest with bighorn sheep seasonally present along Interstate 15 and the Big Hole River. A major die-off decimated this herd in 1995, but small bands of bighorn sheep have persisted throughout the previously occupied habitat, and a supplemental reintroduction was made in 2001. Current distribution of bighorn sheep exceeds the original core habitat area. No overall habitat management plan is in place.

Relevance Criteria

This nomination meets the Relevance Criteria 2 for a fish and wildlife resource. Bighorn sheep is a priority species for the BLM and occur in these areas.

Importance Criteria

This habitat area does not meet the importance criteria for a fish and wildlife resource. It does not have more than locally significant qualities or circumstances, as there are over 40 herds of bighorn sheep in Montana and many others in the western US. The nominated areas are not more or less important than other bighorn sheep areas in Montana or the Intermountain West. Bighorn sheep are susceptible to adverse change, but the habitats in the nominated area are not susceptible to these changes. The area is not considered fragile, nor has it been recognized as warranting special protection under the importance criteria.

Findings

This nomination meets the relevance criteria for a fish and wildlife resource but does not meet the importance criteria. Therefore, this nomination will not be carried forward as a potential ACEC.

5.5 High Ore Creek

This external nomination was made during the Butte RMP public scoping process in 2004. High Ore Creek is shown in **Figure 2**.

Description of Area/Nomination

The nomination stated that this area on High Ore Creek, west of the Boulder River in Jefferson County, should be considered for ACEC designation based on post-placer mining restoration that has significantly enhanced the water quality, aquatic integrity, and conservation value of this tributary. The potential to restore the High Ore Creek's native fishery provides another reason to consider ACEC protection. The exact location and size of the nominated area was not included in the nomination so is not known.

Relevance Criteria

This nomination does not meet any of the four relevance criteria. This is a mining reclamation area that is not part of the natural process (Relevance Criteria 3). While the condition of many of the historic properties is exceptional (Relevance Criteria 1), those resources are located on private land, and ACECs may only be considered on BLM-managed lands. The historic mining features on BLM-managed land are abandoned mine openings and ditches, and those site types are very common in the area. As such, the BLM-managed lands do not meet any relevance criteria.

Importance Criteria

The importance criteria were not reviewed because the relevance criteria were not met.

Findings

This nomination does not meet any relevance criteria and will not be carried forward as a potential ACEC.

5.6 Sleeping Giant ACEC (Existing Designation)

The Sleeping Giant ACEC (**Figure 4**) was designated an ACEC in the Headwaters RMP Record of Decision in 1984 (BLM 1984). The Sleeping Giant ACEC Management Plan (BLM 1988b) directs that the area is managed for the values for which it was designated. It is being reevaluated now because BLM regulations require reconsideration of existing ACECs during the RMP revision process (BLM 1988a).

Description of Area/Nomination

The 11,609-acre Sleeping Giant ACEC is adjacent to the Holter Lake Recreation Area complex, about 30 miles north of Helena in Lewis and Clark County. The ACEC is mostly comprised of the Sleeping Giant WSA and Sheep Creek WSA. The ACEC has steep irregular topography, with elevations ranging from 3,600 to 6,800 feet. About half the area is forested with mixed conifers, including Douglas-fir *(Pseudotsuga menziesii)*, ponderosa pine *(Pinus ponderosa)*, limber pine *(Pinus flexilis)*, and lodgepole pine *(Pinus contorta)*. Cottonwood trees *(Populus* spp.*)* and deciduous shrubs are associated with numerous riparian areas within the ACEC. The nonforested portions are composed of sedimentary rock ledges, talus slopes, and native grasslands. Twenty drainages dissect the area. Watershed values are high, and there are six important perennial streams.

Relevance Criteria

This area meets Relevance Criteria 1 for significant scenic values and Relevance Criteria 2 for a fish and wildlife resource. The most outstanding features or landmark in the ACEC is the Sleeping Giant, a formation created by the profile of the Beartooth Mountain and the rock outcroppings of the lower ridgeline that extend toward the Missouri River. The Sleeping Giant is a well-known landmark visible from the city of Helena.

The overall terrain is highly natural, providing outstanding scenic values. Off-site vistas of the surrounding landscape also are outstanding. Seven miles of ridgeline hiking routes offer panoramic views of the Rocky Mountains. The nationally significant Lewis and Clark National Historic Trail traverses the area. Recreation opportunities are diverse and include fishing, camping, hiking, horse travel, hunting, nature study, photography, and snowshoeing. There is an abandoned homestead, consisting of a cabin, framed house, barn, outhouse, shed, and root cellar, in the area. Another important value includes 11 miles of Holter Lake/Missouri River shoreline (BLM 1991, 2004).

Important wildlife species include bighorn sheep, mountain goat, elk, American black bear *(Ursus americanus),* mule deer, furbearers, coldwater fisheries (particularly trout *[Oncorhynchus* spp.*]*), Canada goose *(Branta canadensis),* osprey *(Pandion haliaetus),* the federally listed as threatened grizzly bear, and the federally listed as threatened bald eagle *(Haliaeetus leucocephalus).*

Importance Criteria

This area meets Importance Criteria 1 for scenic values and a fish and wildlife resource because the values have more than locally significant qualities that give the area special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resources. Also, the area meets Importance Criteria 2 for both relevant values because the values have qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change.

Findings

This nomination continues to meet the relevance and importance criteria and will be carried forward as a potential ACEC.

5.7 Sleeping Giant ACEC Extension

This external nomination was made during the Butte RMP public scoping process in 2004. The nominated area is shown in **Figure 2**.

Description of Area/Nomination

The nomination stated that the proposed Sleeping Giant Extension ACEC is at the west end of the existing Sleeping Giant ACEC on both sides of Interstate 15. It includes BLM lands in Sections 21, 22, 23, 26, 27, 28, 29, 31, 32, 33, 34, and 35 of Township 14 North, Range 4 West; and Sections 2, 3, 4, 5, 10, 11, 12, and 13 of Township 13 North, Range 4 West, and Section 18 of Township 13 North, Range 3 West, Montana Principal Meridian, Lewis and Clark County. The site is composed of approximately 8,000 acres within a diverse landscape of ridges, hills, grasslands, and aspen-sagebrush mosaics. The area includes Little Prickly Pear Creek and several hiking trails, logging roads, and all-terrain vehicle trails.

Relevance Criteria

When the Sleeping Giant ACEC was originally evaluated in the early 1980s, the extension areas included in this nomination did not meet any relevance criteria. The relevant values of the Sleeping Giant ACEC – significant scenic and historical values (unique topographic and vegetation features and stage coach travel route and ford from Great Falls to Butte) (Relevance Criteria 1) and a wildlife resource (Relevance Criteria 2) – are not present in the nominated extension area.

Importance Criteria

The importance criteria were not reviewed because the relevance criteria were not met.

Findings

This nomination does not meet any of the relevance criteria so will not be carried forward as a potential ACEC.

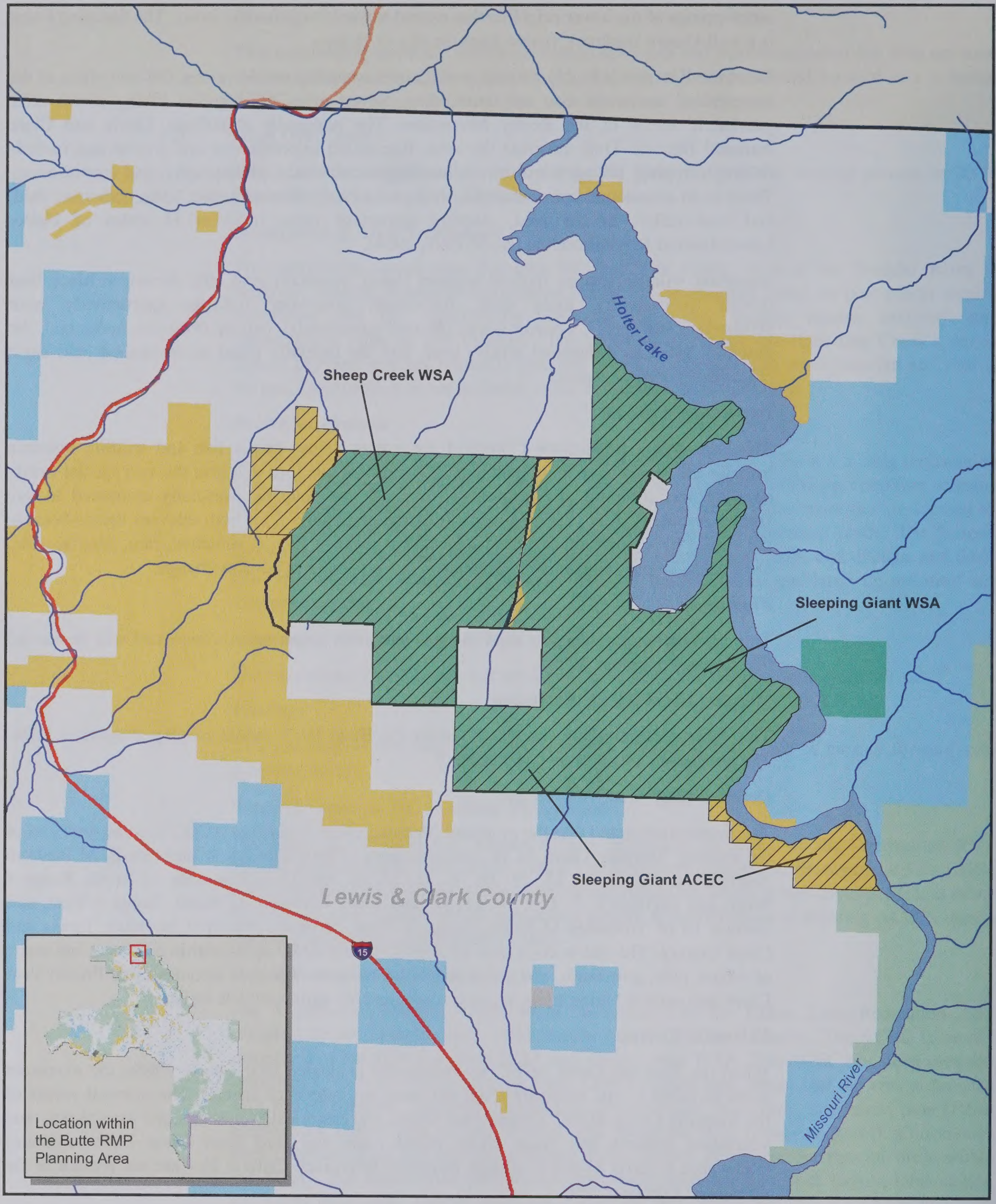

Holter Lake
Sheep Creek WSA
Sleeping Giant WSA
Sleeping Giant ACEC
Lewis & Clark County
15
Missouri River
Location within the Butte RMP Planning Area
1:100,000
0
Miles
2
🟩 Wilderness Study Area (WSA)
▨ Potential Area of Critical Environmental Concern (ACEC)
Butte Field Office Planning Area Boundary
Rivers and Streams
Interstates
Roads
County Boundaries
🟨 Bureau of Land Management (BLM) Lands
🟨 Bureau of Reclamation (BOR) Lands
☐ Private Lands
🟦 State of Montana Lands
🟩 USDA Forest Service Lands
🟩 USDI Fish and Wildlife Service Lands
No warranty is made by the Bureau of Land Management (BLM) for use of data for purposes not intended by BLM.

FIGURE 4

Location of Existing Area of Critical Environmental Concern
Sleeping Giant
BLM, Butte Field Office
Butte RMP and EIS

5.8 Spokane Creek

This internal nomination made by BLM specialists is depicted in **Figure 5**.

Description of Area/Nomination

This area is part of the McMaster Ranch acquisition that was facilitated by The Conservation Fund and purchased by the BLM in 2004 with Land and Water Conservation Funds. The approximately 14-acre area is located on BLM-managed lands along Hauser Lake in Sections 4 and 5, Township 7 North, Range 4 West, Montana Principal Meridian, Lewis and Clark County (Figure 5).

The area is comprised of two converging perennial reaches of Spokane Creek and a diverse composition of riparian vegetation. It is immediately downstream of a 120-acre private parcel that is under a conservation easement. The Conservation Fund, and ultimately the BLM, has first right of purchase for the privately owned parcel if the private owners decide to sell in the future. Within the conservation easement, there are several large springs that contribute the majority of the stream flows through the nominated area. The BLM has been entrusted to manage the conservation easement and its water resources to maintain or enhance its natural values. Partnerships are currently underway to protect this important resource.

Relevance Criteria

The natural characteristics of the nominated Spokane Creek area meet Relevance Criteria 2 and 3. The area provides essential habitat for maintaining both plant and animal diversity (Relevance Criteria 2). The aquatic and riparian plant communities provide a natural functioning system (Relevance Criteria 3).

Importance Criteria

The relevant resource values are substantially significant and meet Importance Criteria 1, 2, and 3. Spokane Creek and its associated riparian vegetation, which provide a natural functioning system, present more than locally significant qualities of special worth, distinctiveness, and cause for concern (Importance Criteria 1). It is critically important as a natural spawning stream for three key sport fish species (brown trout *[Salmo trutta]*, rainbow trout *[Oncorhynchus mykiss]* and Kokanee salmon *[Oncorhynchus nerka kennerlyi]*) in Hauser Lake and the Missouri River that attract anglers throughout Montana and the US. This important spawning stream also provides food sources for the federally listed as threatened bald eagle.

The relevant values are sensitive, rare, irreplaceable, unique, and vulnerable, which makes them worthy of special management and protection (Importance Criteria 2). These qualities are a result of Spokane Creek being the only properly functioning perennial, spawning stream that flows into Hauser Lake. The stream is primarily spring fed, has high water quality, maintains consistently cool temperatures, and provides excellent yearlong spawning habitat because of its abundant gravel bars, overhanging banks, and vegetative shading. In addition to its unique qualities for sustaining fisheries on Hauser Lake and the Missouri River, this nominated area provides habitat for bald eagle, osprey, and numerous species of waterfowl, and excellent opportunities for wildlife observation and nature study.

The FLPMA mandates that important fish and wildlife resources be protected through special management attention that ACEC designations provide (Importance Criteria 3).

Findings

This nomination meets the relevance and importance criteria and will be carried forward as a potential ACEC.

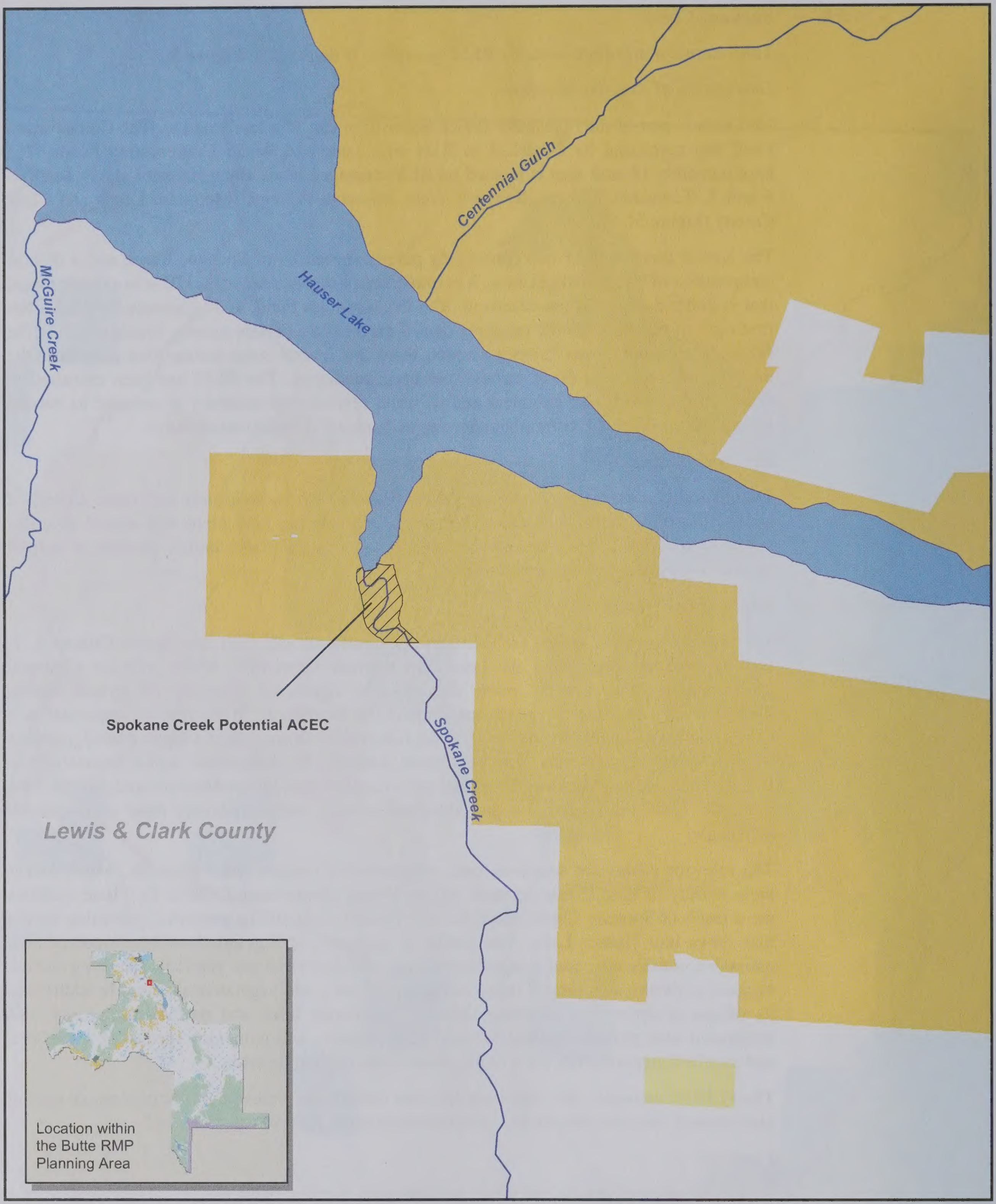

Centennial Gulch
Hauser Lake
McGuire Creek
Spokane Creek Potential ACEC
Spokane Creek
Lewis & Clark County
Location within the Butte RMP Planning Area
1:24,000
0
Miles
0.5
Wilderness Study Area (WSA)
Potential Area of Critical Environmental Concern (ACEC)
Butte Field Office Planning Area Boundary
Rivers and Streams
Interstates
Roads
County Boundaries
Bureau of Land Management (BLM) Lands
Bureau of Reclamation (BOR) Lands
Private Lands
State of Montana Lands
USDA Forest Service Lands
USDI Fish and Wildlife Service Lands

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FIGURE 5

Location of Potential Area of Critical Environmental Concern
Spokane Creek
BLM, Butte Field Office
Butte RMP and EIS

5.9 Ringing Rocks

This internal nomination made by BLM specialists is depicted in **Figure 6**.

Description of Area/Nomination

The Ringing Rocks are located approximately four miles northeast of the town of Pipestone and Interstate 90. The nominated ACEC is about 160 acres of BLM-administered lands in Section 9, Township 2 North, Range 5 West, Montana Principal Meridian, Jefferson County. The ACEC encompasses an approximate one-acre open outcrop of weathered monzonite with a wide range of weathered boulders. These weathered blocks range from 3 to 13 feet. The rocks ring with bell-like tones when struck lightly with a stout stick or rock hammer. The rocks only ring in outcrop; hand samples broken off will not ring.

Relevance Criteria

This area meets Relevance Criteria 3 for a rare geological feature. Ringing rocks are reportedly found throughout the world, but they are not common. The only other site where ringing rocks are found in the US is in Bucks County, Pennsylvania.

Importance Criteria

The geologic feature meets Importance Criteria 1 (more than locally significant distinctive geological feature) and 2 (rare and unique geological feature). The Ringing Rocks site is one of only two known sites in the continental US where rocks ring when struck, thus making this an extremely rare occurrence.

Findings

This nomination meets the relevance and importance criteria and will be carried forward as a potential ACEC.

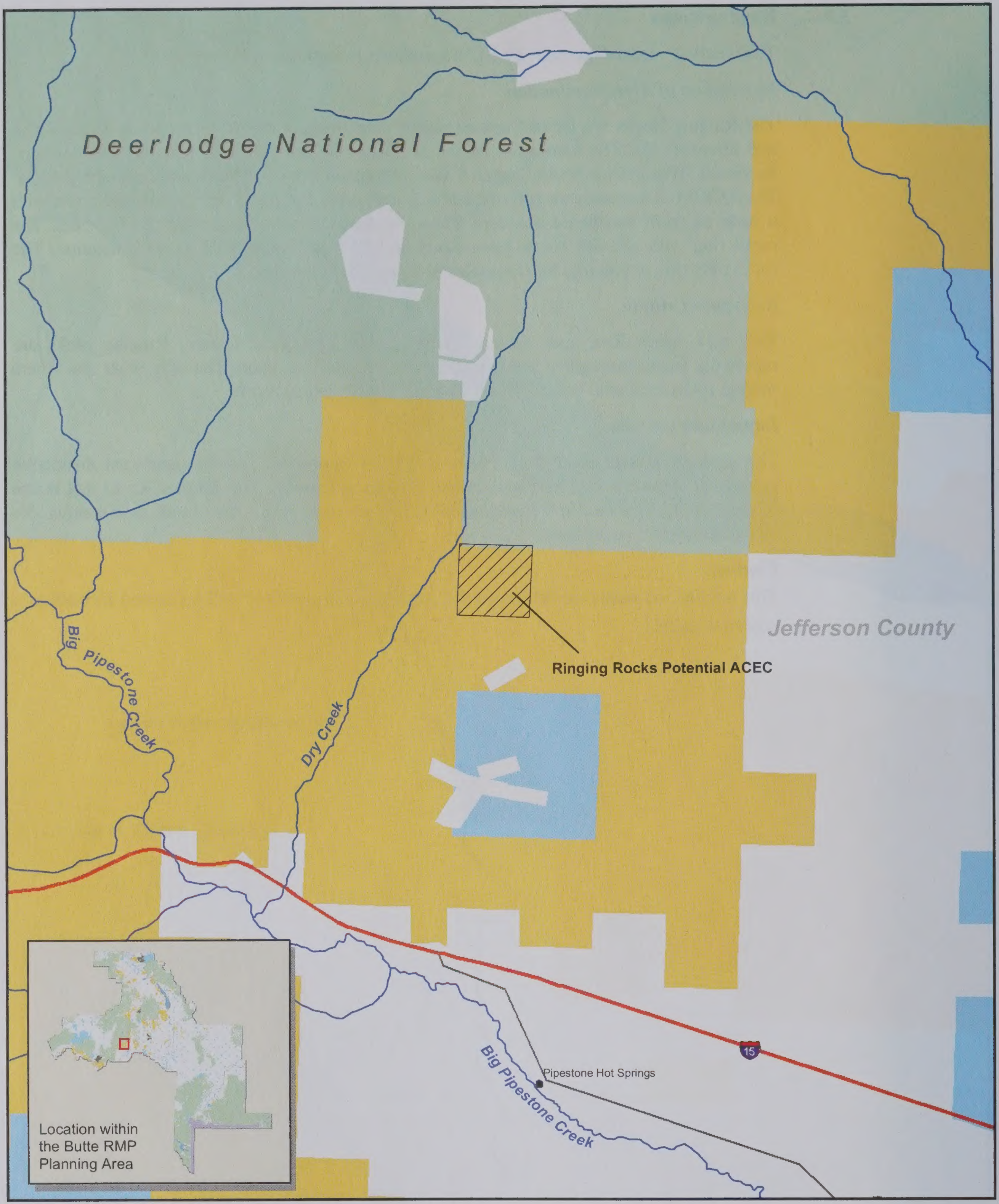
Deerlodge National Forest
Jefferson County
Ringing Rocks Potential ACEC
Big Pipestone Creek
Dry Creek
Pipestone Hot Springs
Big Pipestone Creek
15
Location within the Butte RMP Planning Area
1:60,000
0
Miles
1
No warranty is made by the Bureau of Land Management (BLM) for use of data for purposes not intended by BLM.
Wilderness Study Area (WSA)
Potential Area of Critical Environmental Concern (ACEC)
Butte Field Office Planning Area Boundary
Rivers and Streams
Interstates
Roads
County Boundaries
Bureau of Land Management (BLM) Lands
Bureau of Reclamation (BOR) Lands
Private Lands
State of Montana Lands
USDA Forest Service Lands
USDI Fish and Wildlife Service Lands

FIGURE 6

Location of Potential Area of Critical Environmental Concern
Ringing Rocks
BLM, Butte Field Office
Butte RMP and EIS

5.10 Humbug Spires ACEC Nomination

This internal nomination by BLM specialists is depicted in Figure 7.

Description of Area/Nomination

This potential ACEC includes the majority of both the Humbug Spires original Primitive Area designated in 1972 and the recommended wilderness Instant Study Area that was finalized in 1981. The potential ACEC totals about 8,400 acres of public land. The area is located in Silver Bow County in southwestern Montana, approximately 15 miles south of Butte and four miles east of Divide and Interstate 15. The area is accessible from I-15 via a primitive road from the Divide interchange and an improved gravel road from the Moose Creek interchange that leads to a developed trailhead.

The Humbug Spires potential ACEC is a highly natural and pristine area. The majority of the area is forested with dense stands of Douglas-fir and lodgepole pine. Small areas of old growth Douglas-fir trees exist within numerous drainage bottoms. Riparian areas of willows, dogwood, alder, aspen, and cottonwoods are scattered throughout the streams and upper tributaries. The topography is extremely diverse with numerous ridges and dissecting drainages. Geologically, there are hundreds of large granite spires throughout the area. About ten of these light gray spires are between 300 and 600 feet tall. Moose Creek is the primary perennial stream bisecting the area. Moose Creek supports small populations of brook, rainbow, and cutthroat trout. Important big-game species include elk, mule deer, black bear, moose, and bighorn sheep. Other wildlife species common to the area are mountain lion, coyote, fox, weasel, bobcat, beaver, squirrels, rabbits, grouse, and several species of raptors.

Relevance Criteria

The natural characteristics of the Humbug Spires area meet Relevance criteria 1, 2, and 3. The natural and diverse topography, vegetation, streams, and rock spires of the area provide outstanding scenic values that are significant. The Visual Resource Management Classification of this area is Class 1 which is the highest and most protective BLM rating possible. These characteristics meet Criterion 1.

The area provides essential habitat for maintaining both plant and animal diversity, thus meeting relevance criterion 2. In addition the area provides active habitat for the following Threatened/Endangered/Sensitive species: Canada lynx, bald eagle, Northern goshawk, peregrine falcon, black-backed woodpecker, three-toed woodpecker, Townsend's big-eared bat, fringed myotis, long-legged myotis and the long-eared myotis.

The aquatic and riparian plant communities associated with Moose Creek and its upper tributaries provide a natural functioning system. Sensitive plant species found within the area include Idaho sedge and Sapphire rockcress. These features meet relevance Criterion 3.

Importance Criteria

The above resource values are substantially significant and meet Importance Criteria 1, 2, and 3. The abundance, size, and quality of the granite spires represent more than locally significant geologic features that attract both regional and national recognition and visitation. The overall availability, setting, and distinctiveness of these geologic formations are exceptional and significant beyond the local level. These qualities meet importance Criterion 1 since they are more than locally significant.

This area has qualities that are sensitive, rare, irreplaceable, unique and vulnerable that makes it worthy of special management and protection. The area is highly natural in character and provides important habitat for several big-game species, as well as Threatened/Endangered/Sensitive species of both plants and animals. These characteristics meet importance Criterion 2.

Due to the outstanding qualities of scenery, naturalness, solitude, wildlife diversity, primitive and unconfined recreation opportunities, and the presence of Threatened/Endangered/Sensitive species, the area has been both designated as a Primitive Area as well as recommended for Wilderness designation. These qualities warrant continued protection and therefore meet importance Criterion 3.

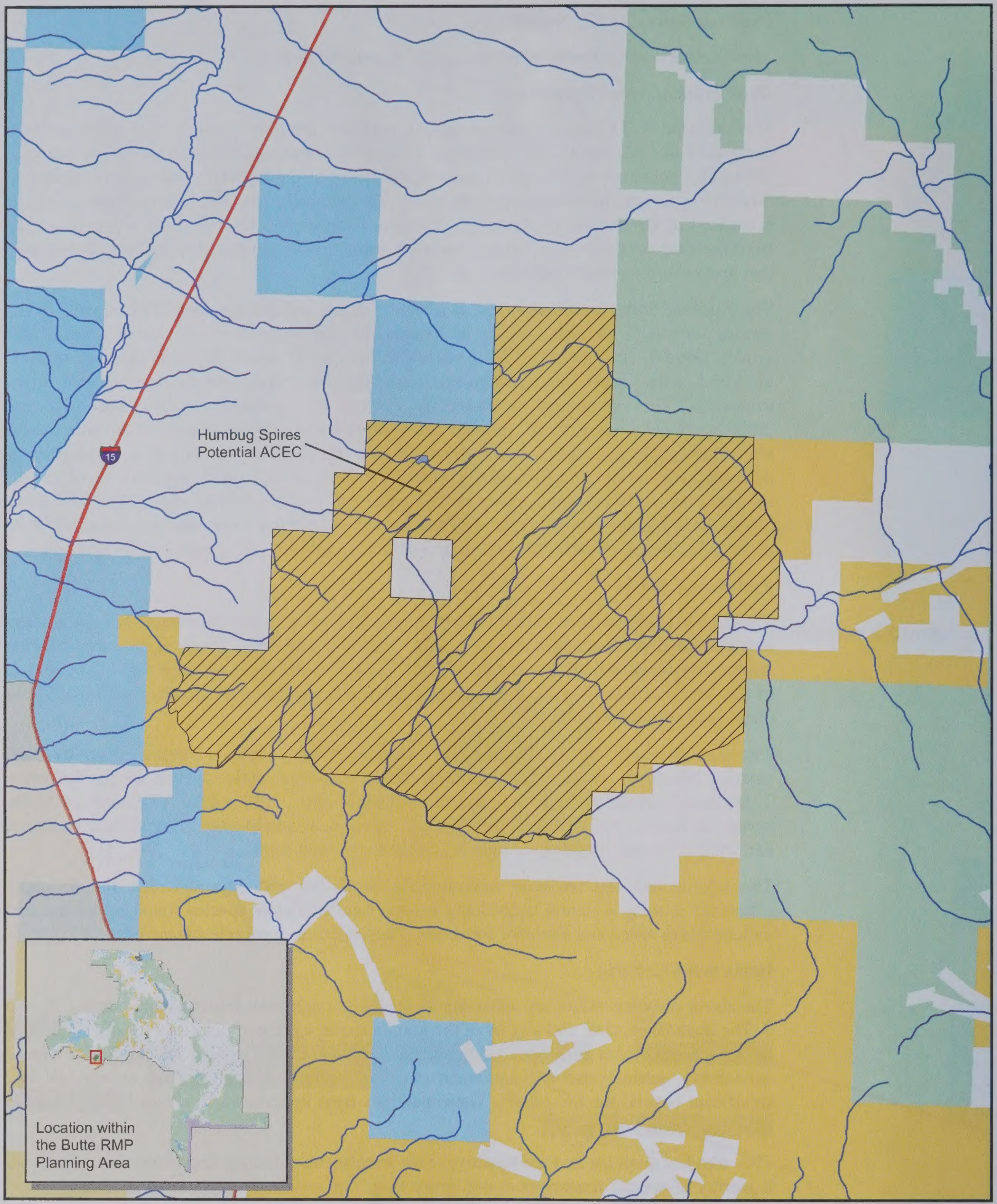
Humbug Spires
Potential ACEC
15
Location within
the Butte RMP
Planning Area
1:72,000
0
Miles
1
Potential Area of Critical Environmental Concern (ACEC)
Butte Field Office Planning Area Boundary
Rivers and Streams
Interstates
Roads
County Boundaries
Bureau of Land Management (BLM) Lands
Bureau of Reclamation (BOR) Lands
Private Lands
State of Montana Lands
USDA Forest Service Lands
USDI Fish and Wildlife Service Lands
No warranty is made by the Bureau of Land Management (BLM) for use of data for purposes not intended by BLM.

FIGURE 7

Location of Potential Area of Critical Environmental Concern
Humbug Spires
BLM, Butte Field Office
Butte RMP and EIS

6. SUMMARY AND CONCLUSIONS

A total of ten nominated areas and existing ACECs were evaluated. These included five external nominations (made by other agencies or the public), three internal nominations (made by BLM specialists), one recommendation from the Dillon Management Framework Plan (BLM 1979), and one existing ACEC. Five areas totaling approximately 87,700 acres meet the relevance and importance criteria and will be carried forward as potential ACECs (**Table 1**).

Various alternatives in the Draft RMP will recommend the areas for designation as ACECs (or continued designation in the case of Sleeping Giant ACEC) if special management is required to protect the relevant and important values. Areas found not to meet the relevance and importance criteria are not being carried forward as potential ACECs.

Table 1
Potential Areas of Critical Environmental Concern

Potential ACEC	Size (acres)	Relevance Criteria Met	Importance Criteria Met
Elkhorn Mountains	67,500	1, 2	1, 2, 3
Sleeping Giant ACEC (existing designation)	11,609	1, 2	1, 2
Spokane Creek	14	2, 3	1, 2, 3
Ringing Rocks	160	3	1, 2
Humbug Spires	8,400	1, 2, 3	1, 2, 3

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GLOSSARY

AREA OF CRITICAL ENVIRONMENTAL CONCERN (ACEC). An area established through the planning process, as provided in FLPMA, where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to important historic, cultural, or scenic values; or to fish and wildlife resources or other natural systems or processes; or to protect life and afford safety from natural hazards.

IDENTIFICATION CRITERIA. To be considered as a potential ACEC and analyzed in RMP alternatives, an area must meet the criteria of relevance and importance, as established and defined in 43 CFR 1610.7-2.

RELEVANCE. An area meets the relevance criterion if it contains one or more of the following:

1. A significant historic, cultural, or scenic value (including but not limited to rare or sensitive archeological resources and religious or cultural resources important to native Americans);
2. A fish and wildlife resource (including but not limited to habitat for endangered, sensitive, or threatened species, or habitat essential for maintaining species diversity);
3. A natural process or system (including but not limited to endangered, sensitive, or threatened plant species; rare, endemic, or relict plants or plant communities that are terrestrial, aquatic, or riparian; or rare geological features); and/or
4. Natural hazards (including but not limited to areas of avalanche, dangerous flooding, landslides, unstable soils, seismic activity, or dangerous cliffs). A hazard caused by human action may meet the relevance criteria if it is determined through the RMP process that it has become part of a natural process.

IMPORTANCE. The value, resource, system, process, or hazard described above must have substantial significance and values in order to satisfy the importance criteria. This generally means that the value, resource, system, process, or hazard is characterized by one or more of the following:

1. Has more than locally significant qualities that give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource;
2. Has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change;
3. Has been recognized as warranting protection in order to satisfy national priority concerns or to carry out the mandates of FLPMA;
4. Has qualities that warrant highlighting in order to satisfy public or management concerns about safety and public welfare; and/or
5. Poses a significant threat to human life and safety or to property.

PLANNING AREA. The geographical area for which land use and resource management plans are developed and maintained.

RESOURCE MANAGEMENT PLAN (RMP). A land use plan that establishes land use allocations, multiple-use guidelines, and management objectives for a given planning area. The BLM has used the RMP planning system since about 1980.

APPENDIX J – DRAFT REPORT ON WILD AND SCENIC RIVERS ELIGIBILITY & SUITABILITY DETERMINATIONS

Upper Big Hole River, Deer Lodge County, Montana

BUTTE RESOURCE MANAGEMENT PLAN

BUTTE FIELD OFFICE, MONTANA

February 2006

US Department of Interior, Bureau of Land Management
106 North Parkmont
Butte, Montana 59701

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LIST OF ACRONYMS

Acronym or Abbreviation	Full Phrase
BLM	United States Department of the Interior, Bureau of Land Management
EA	environmental assessment
EIS	environmental impact statement
FERC	Federal Energy Regulatory Commission
FLPMA	Federal Land Policy and Management Act
GIS	Geographic Information System
IM	Instruction Memorandum
MFWP	Montana Fish, Wildlife, and Parks
MDEQ	Montana Department of Environmental Quality
MOU	Memorandum of Understanding
NPS	United States Department of the Interior, National Park Service
NWSRS	National Wild and Scenic Rivers System
Planning Area	Butte Resource Management Plan planning area
PPL	Pennsylvania Power and Light Corporation
RMA	Recreation Management Area
RMP	resource management plan
TMDL	total maximum daily load
USC	United States Code
USFS	United States Department of Agriculture, Forest Service
VRM	Visual Resource Management
WSA	Wilderness Study Area
WSR	Wild and Scenic River
WSR Act	Wild and Scenic Rivers Act

DRAFT WILD AND SCENIC RIVER ELIGIBILITY & SUITABILITY DETERMINATIONS

EXECUTIVE SUMMARY

As part of the land use planning process for the Butte Resource Management Plan (RMP), a US Department of the Interior, Bureau of Land Management (BLM) interdisciplinary team analyzed all river and stream segments in the Butte Field Office administrative area (Planning Area) that might be eligible for inclusion in the National Wild and Scenic Rivers System (NWSRS). This included screening all Planning Area rivers to identify those with BLM surface ownership. These initial screening and identification efforts resulted in a list of 164 rivers or river segments for further consideration in the inventory process.

Additional review focused on whether these 164 segments meet free-flowing criteria and contain any outstandingly remarkable values, as defined in the Wild and Scenic Rivers Act of 1968 (Public Law 90-542 [as amended], 16 United States Code 1271-1287) (WSR Act). Of the 164 river segments, four segments totaling 12 miles meet the eligibility criteria. These include segments on the Big Hole River, Missouri River, Moose Creek, and Muskrat Creek. Tentative classifications are assigned to each eligible segment as follows: Big Hole River – Recreational; Missouri River – Scenic; Moose Creek – Scenic; and Muskrat Creek – Scenic.

INTRODUCTION

Section 5(d)(1) of the WSR Act directs Federal agencies to consider potential wild and scenic rivers in their land and water planning processes *("In all planning for the use and development of water and related land resources, consideration shall be given by all Federal agencies involved to potential national wild, scenic and recreational river areas")*. To fulfill this requirement, whenever the BLM undertakes a land use planning effort (e.g., an RMP), it analyzes river and stream segments that might be eligible for inclusion in the NWSRS. The BLM, Butte Field Office, is revising its older land use plans, namely the Headwaters RMP (BLM 1984) and the Dillon Management Framework Plan (BLM 1979). The revised RMP will provide a single, comprehensive land use plan that will guide management of public land administered by the Butte Field Office.

This report is a record of the wild and scenic river study that is being conducted concurrently with the Butte RMP revision. This report documents BLM's examination of Butte Field Office river segments as they relate to eligibility, suitability, and classification criteria in the WSR Act.

The BLM Butte Field Office Planning Area is in mid-western Montana **(Figure 1).** Within the Planning Area, BLM administers about 311,000 acres of public surface land and 656,000 acres of Federal mineral estate in Lewis and Clark, Jefferson, Broadwater, Deer Lodge, Silver Bow, Gallatin, and Park Counties.

WHAT IS A WILD AND SCENIC RIVER?

Congress enacted the WSR Act to provide a national policy for preserving and protecting selected rivers and river segments in their free-flowing condition for the benefit and enjoyment of present and future generations. The WSR Act provides criteria that must be considered during the analysis. The eligibility process is depicted in **Figure 2**. No rivers in the Planning Area are currently managed under the WSR Act.

STEPS IN THE WILD AND SCENIC RIVERS STUDY PROCESS

The wild and scenic river study process is comprised of two main components: the inventory phase and the study phase. The inventory phase includes identifying eligible river and stream segments, assigning tentative classification (Wild, Scenic, or Recreational), and describing protective management for the eligible segments. The study phase includes determining the suitability of eligible segments for inclusion in the NWSRS and describing interim management measures. The inventory is conducted during the data-gathering stage of RMP revision, and the study phase is done during formulation of the Draft RMP and Proposed RMP.

Inventory Phase

The purpose of the inventory is to identify eligible rivers and river segments in the Planning Area and to assign them a tentative classification. The WSR Act directs agencies to consider a wide variety of internal and external sources to identify potentially eligible rivers. The goal is to avoid overlooking river segments that could be included in the NWSRS. In cases where a particular river segment is predominantly non-Federal in ownership and contains interspersed BLM-administered lands, BLM shall evaluate only its segment as to eligibility and defer to the state or private landowners' discretion as to their determination of eligibility (BLM 2003).

Identification of Eligible River Segments

The BLM applies standard criteria to identified river segments to determine eligibility. To be eligible, a river segment must be free-flowing and must possess at least one river-related value considered outstandingly remarkable. The specific criteria for free-flowing and outstandingly remarkable values are listed in Appendix A.

There are several sources generally used to identify potentially eligible rivers, as follows:

- *The Outstanding Rivers List* (Huntington and Echeverria 1991). This was compiled by the American Rivers Organization as a comprehensive nationwide compilation of rivers that possess some outstanding ecological, recreational, natural, cultural, or scenic values. Rivers protected by legislation and rivers currently unprotected are included. The list includes more than 15,000 outstanding United States river segments, roughly 300,000 river miles. Some of this information is redundant with the Nationwide Rivers Inventory, which is included within the Outstanding Rivers List, but much of it is additional information.
- *The Nationwide Rivers Inventory* (NPS 2004). This inventory was initially completed in 1982 and is maintained and periodically updated by the National Park Service. Additions have been made as a result of BLM and U.S. Forest Service (USFS) inventories, done as part of their land use planning processes. It is a listing of more than 3,400 free-flowing river segments in the United States that are believed to possess one or more "outstandingly remarkable" natural or cultural values judged to be of more than local or regional significance.
- *Montana Fish, Wildlife, and Parks' Class One Streams List* (MWFP 2004a). This lists Class I streams, which are blue ribbon fisheries, throughout Montana.
- *The Montana Statewide Comprehensive Outdoor Recreation Plan* (MWFP 2004b). The 2003-2007 Statewide Comprehensive Outdoor Recreation Plan outlines Montana's five-year plan for outdoor recreation management, conservation, and development. It provides the strategic framework for recreation facility managers to use as a guideline in planning and prioritizing resources for staff and funding and includes a timeline for implementation.
- The USFS, Helena National Forest Wild and Scenic Rivers Eligibility Study (Helena National Forest 1989). The Helena National Forest conducted eligibility studies on some reaches that are considered in this report. Prior to 1989, segments of four streams located on Helena National Forest-administered lands were determined eligible: portions of Copper Creek, Little Blackfoot River, Beaver Creek, and the Missouri River from Hauser Dam to Cochran Gulch (Helena National Forest 2004). Helena National Forest will conduct suitability studies on these eligible reaches in the future. These include the three-mile free-flowing stretch of the Missouri River located below Hauser Dam and above Holter Lake (in the Helena National Forest), which is located in the very northern portion of the Butte Field Office; this was tentatively classified as scenic.
- *River segments identified in public scoping during the RMP revision process.* No river segments were identified by the public during the scoping process.

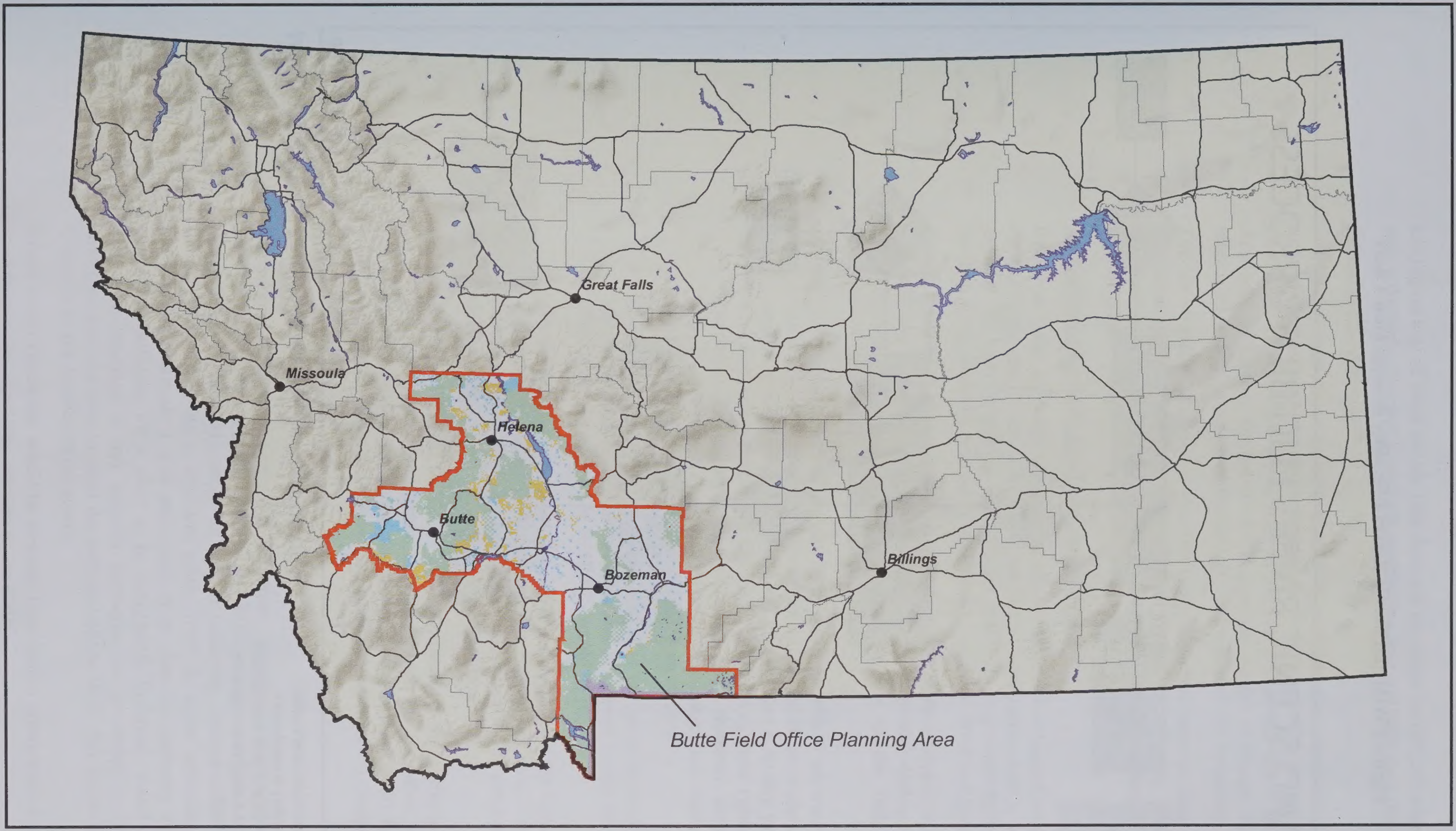
Great Falls
Missoula
Helena
Butte
Bozeman
Billings
Butte Field Office Planning Area
0
Miles
60

FIGURE 1

Butte RMP Planning Area, Montana
BLM, Butte Field Office
Butte RMP and EIS

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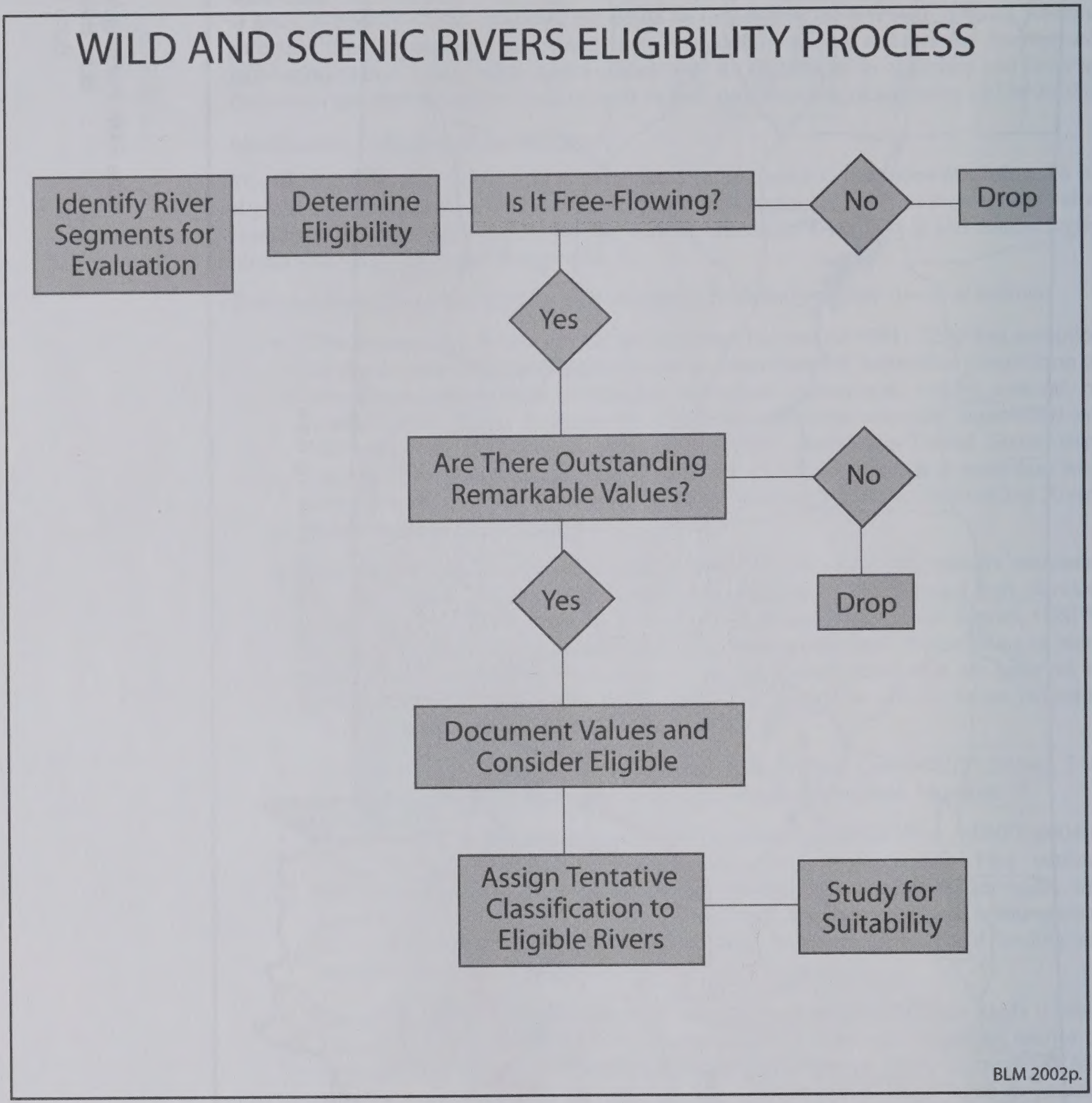
Figure 2 Wild and Scenic Rivers Eligibility Process Flow Chart


WILD AND SCENIC RIVERS ELIGIBILITY PROCESS
Identify River Segments for Evaluation
Determine Eligibility
Is It Free-Flowing?
No
Drop
Yes
Are There Outstanding Remarkable Values?
No
Drop
Yes
Document Values and Consider Eligible
Assign Tentative Classification to Eligible Rivers
Study for Suitability

BLM 2002p.

The BLM inventories and evaluates rivers when it develops a RMP. The inventory is conducted during the data gathering stage of RMP development, and the study phase is done during the formulation of the Draft and Proposed RMP.

Wild and Scenic Rivers Eligibility Process Flow Chart

Listing on any of these source lists does not represent an official determination of eligibility and, conversely, absence from these source lists does not indicate a river's noneligibility.

Tentative Classification

Once a river segment is considered eligible, it is assigned a tentative classification. There are three classes for rivers designated under the WSR Act: Wild, Scenic, and Recreational. The criteria for classification are defined in Section 2(b) of the WSR Act and are described in Appendix B. Classes are based on the type and degree of human development and access associated with the river and adjacent lands at the time of the inventory.

The classification does not reflect the types of values present along a river segment. The classification assigned during the inventory phase is tentative. Final classification is a congressional legislative determination, along with designation of a river segment as part of the NWSRS.

Interim Protective Management of Eligible Rivers

Rivers or river segments determined eligible must be managed to protect the free flow, outstandingly remarkable values, and tentative classification until a suitability study of the segment has been completed. Management guidelines to protect eligible candidate rivers are detailed in Appendix C, *Interim Protection for Candidate Wild and Scenic Rivers*.

During the interim phase, any proposed action that could adversely affect or be inconsistent with wild and scenic river values would require management decisions based on a National Environmental Policy Act analysis and Section 202 of the Federal Land Policy and Management Act of 1976 (FLPMA), as follows:

- Any proposed action that may be inconsistent with or adversely affect identified wild and scenic river values would require a site-specific environmental assessment (EA), opportunity for public involvement, and at least a 30-day public comment period. The decision notice record for the EA (involving these types of actions) would be conducted and signed at the field office level. However, before the decision notice record is signed, a copy of supporting documentation would be forwarded to the applicable state director for review and concurrence.
- If the preparers of the EA determine that the proposal could have a major action significantly affecting the environment, a separate environmental impact statement (EIS) apart from the BLM RMP/EIS would be required.
- Should the preparers of the EA or EIS determine that the action as proposed, or with appropriate mitigation or an acceptable alternative, would not have irreversible or irretrievable adverse impacts and would maintain or enhance identified wild and scenic river values, such action may be approved.
- If the preparers of the EA or EIS determine that the action as proposed would have irreversible or irretrievable adverse impacts to identified wild and scenic river values, the decision on the action would be held temporarily in suspension until wild and scenic river evaluations are address and resolved through the BLM planning process.

Suitability Study Phase

The purpose of the study phase is to determine whether eligible river segments are suitable or unsuitable for inclusion in the NWSRS, per WSR Act criteria. The suitability evaluation does not result in actual designation but only a suitability determination for designation. Only Congress can designate a wild and scenic river. In some instances, the Secretary of the Interior may designate a wild and scenic river when the governor of a state, under certain conditions, petitions for a river to be designated. Congress would ultimately choose the legislative language if any suitable segments are presented to them. Water-protection strategies and measures to meet the purposes of the WSR Act would be the responsibility of Congress in any legislation proposed.

Rivers found unsuitable would be dropped from further consideration and would be managed according to the objectives outlined in the RMP.

The preliminary suitability evaluation is completed as the Draft RMP is prepared. Impacts that would occur from designation and non-designation of the eligible river segments then would be analyzed in the EIS associated with the RMP. Public review and comment on preliminary suitability determinations included in the Draft RMP/EIS would be considered before the BLM makes final suitability determinations in the proposed RMP.

Suitability Criteria

The following 13 factors, identified in BLM Manual Section 8351 (BLM 1992), are applied to each eligible river segment when completing the suitability study:

1. Characteristics that do or do not make the river a worthy addition to the NWSRS;
2. The status of land ownership, minerals, use in the area, including the amount of private land involved, and associated or incompatible uses;
3. Reasonably foreseeable potential uses of the land and related waters that would be enhanced, foreclosed, or curtailed if the area were included in the NWSRS and values that would be foreclosed or diminished if the area were not protected as part of the NWSRS;
4. Federal or state agency that will administer the river should it be added to the NWSRS;
5. Federal, state, tribal, local, public, or others with an interest in designation or non-designation of the river, including the extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state, local, or other agencies and individuals;
6. Estimated cost to the United States of acquiring necessary lands, interests in lands, and administering the area should it be added to the NWSRS;
7. A determination of the degree to which the state or its political subdivision(s) might participate in the preservation and administration of the river should it be proposed for inclusion in the NWSRS;
8. The Federal agency's ability or other mechanisms to protect and manage the identified river-related values other than designation into the NWSRS;
9. An evaluation of the adequacy of local zoning and other land use controls in protecting the river's outstandingly remarkable values by preventing incompatible development;
10. Support or opposition to designation;
11. Historical or existing rights that could be adversely affected with designation; and
12. The consistency of designation with other agency plans, programs, or policies in meeting regional objectives; and
13. The contribution to a river system, watershed, or basin integrity.

Interim Management of Suitable Segments

The WSR Act requires that interim management measures be developed to protect the free-flowing nature, outstandingly remarkable values, and recommended classification of suitable segments until Congressional action regarding designation is taken. Guidelines for interim management are included in Appendix C.

INVENTORY PHASE FOR THE BUTTE RMP REVISION

Various resource personnel from the BLM's Butte Field Office were consulted to conduct the wild and scenic rivers inventory in support of the RMP revision currently underway. The interdisciplinary team was composed of BLM staff specialists in lands and realty, wildlife/fisheries/riparian biology, range/riparian resources, recreation, visual resources, cultural resources, minerals, and geology.

IDENTIFICATION OF ELIGIBLE RIVER SEGMENTS

To avoid overlooking potentially eligible river segments, a combination of sources were used. The primary source was the BLM's geographic information system (GIS) rivers and streams layer (BLM 2004b), which is a comprehensive list of potentially free-flowing waterbodies within the Planning Area. The GIS was cross-referenced with additional sources, including the Outstanding Rivers List (Huntington and Echeverria 1991), Nationwide Rivers Inventory (NPS 2004), Montana Fish, Wildlife, and Parks' (MFWP) Class One Streams List (MWFP 2004a), and Montana Statewide Comprehensive Outdoor Recreation Plan (MWFP 2004b). The Nationwide Rivers Inventory includes two river segments on BLM-administered lands in the Planning Area: 1.06 miles of the Yellowstone River in Park County (Township 7 South, Range 7 East, Sections 19 and 20, Montana Principal Meridian) and the 3.1-mile segment of the Missouri River, between Hauser Dam and Upper Holter Lake (NPS 2004).

From these sources, the BLM interdisciplinary team compiled an inventory of all rivers on BLM-administered surface lands in the Planning Area. BLM limited the inventory to the lands it administers, per recent changes to BLM Manual 8351, *Wild and Scenic Rivers—Policy and Program Direction for Identification, Evaluation, and Management*. The manual revision states that "In cases where a particular river segment is predominantly non-Federal in ownership and contains interspersed BLM-administered lands, BLM shall evaluate only its segment as to eligibility and defer to the State or to the private landowners' discretion as to their determination of eligibility" (BLM 2003). As part of the initial screening process, all Planning Area rivers were divided into multiple segments based on BLM surface ownership. Initial screening resulted in a list of 164 river segments on BLM-administered lands for further consideration. These river segments are located along 55 rivers. These rivers or river segments include those listed in Appendix D which are depicted on **Figure 3**.

Additional review focused on whether any of these 164 segments met free-flowing criteria and contained any outstandingly remarkable values, as defined in the WSR Act. Members of the BLM interdisciplinary team conducted this review for each of their areas of expertise, using their knowledge of the area and consulting available inventory information. This information was considered against the outstandingly remarkable values criteria provided in Appendix A. Based on their findings, team members proposed four river segments, Big Hole River, Missouri River, Muskrat Creek, and Moose Creek, as eligible for further study because they contain outstandingly remarkable values and are free flowing (**Figure 4** and **Table 1**). Following Table 1 is a description of outstandingly remarkable values for each candidate river segment.

Indian Creek Segment 5 was initially found to be eligible. Further evaluation during the suitability phase determined the segment not to be free flowing. The extensive historic and current mining activities have resulted in a channel which does not meet the "natural condition" requirements of free flowing. Numerous placer piles along the segment have resulted in severe modification of the natural channel.

The BLM interdisciplinary team determined that the Yellowstone River segment included in *The Nationwide Rivers Inventory* does not contain any outstandingly remarkable values. The Missouri River segment between Hauser Dam and Upper Holter Lake (the same segment described above and in Table 1), which also is included in *The Nationwide Rivers Inventory,* does have outstandingly remarkable values, as shown in Table 1.

As part of their RMP revision, the BLM Dillon Field Office evaluated one river segment located in the Butte Field Office, the Lower Madison from Black's Ford to Gray Cliff. The Dillon RMP final eligibility report found this segment eligible with a temporary classification of Recreational. The segment was not found suitable in the Dillon RMP.

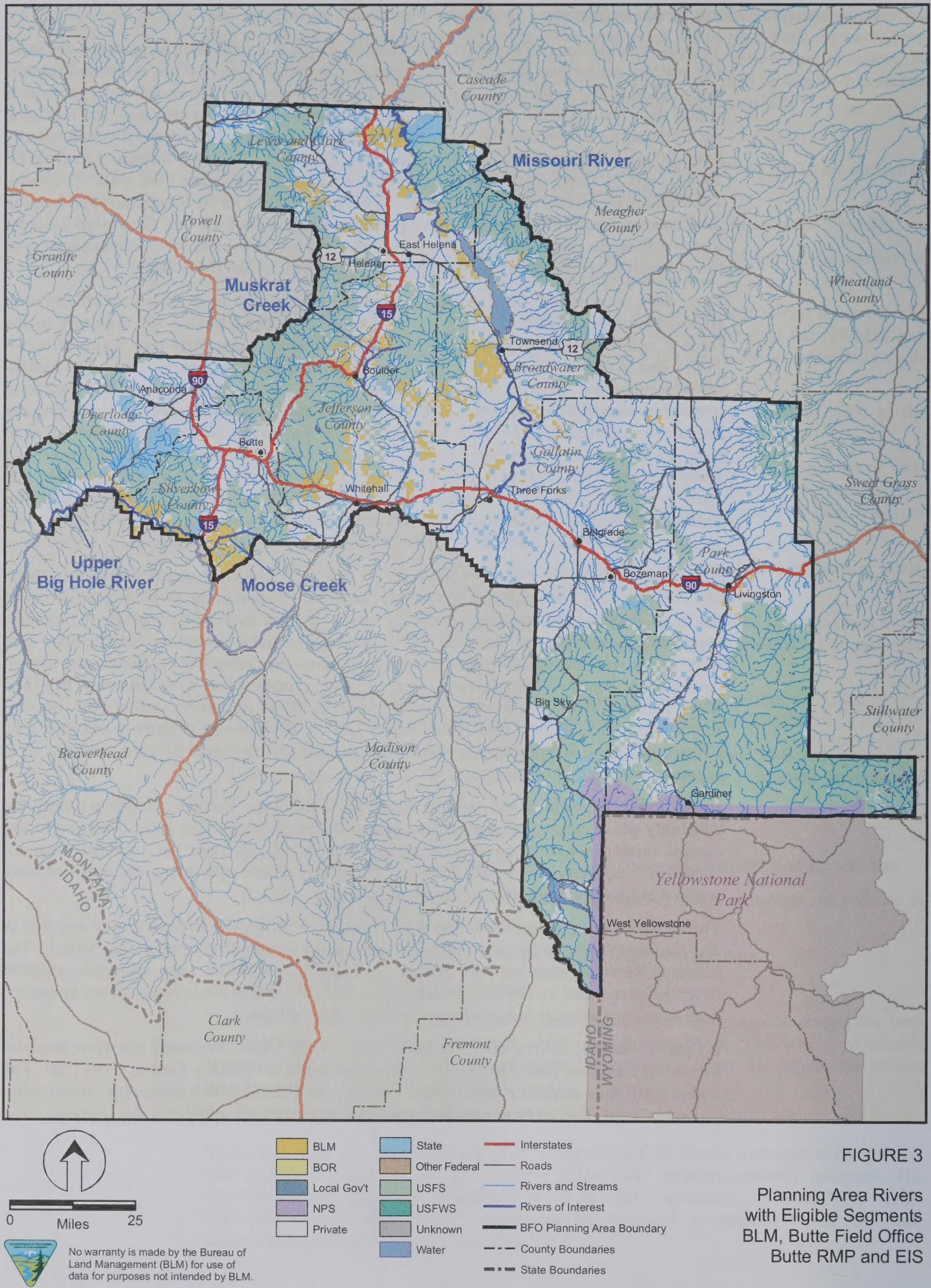

Cascade County
Lewis and Clark County
Missouri River
Meagher County
Powell County
Granite County
East Helena
12
Helena
Muskrat Creek
15
Wheatland County
Townsend
12
Broadwater County
90
Anaconda
Boulder
Deerlodge County
Jefferson County
Butte
Gallatin County
Silverbow County
Whitehall
Three Forks
Sweet Grass County
15
Belgrade
Upper Big Hole River
Moose Creek
Park County
Bozeman
90
Livingston
Big Sky
Stillwater County
Beaverhead County
Madison County
Gardiner
Yellowstone National Park
MONTANA
IDAHO
West Yellowstone
Clark County
Fremont County
IDAHO
WYOMING
0
Miles
25
BLM
BOR
Local Gov't
NPS
Private
State
Other Federal
USFS
USFWS
Unknown
Water
Interstates
Roads
Rivers and Streams
Rivers of Interest
BFO Planning Area Boundary
County Boundaries
State Boundaries
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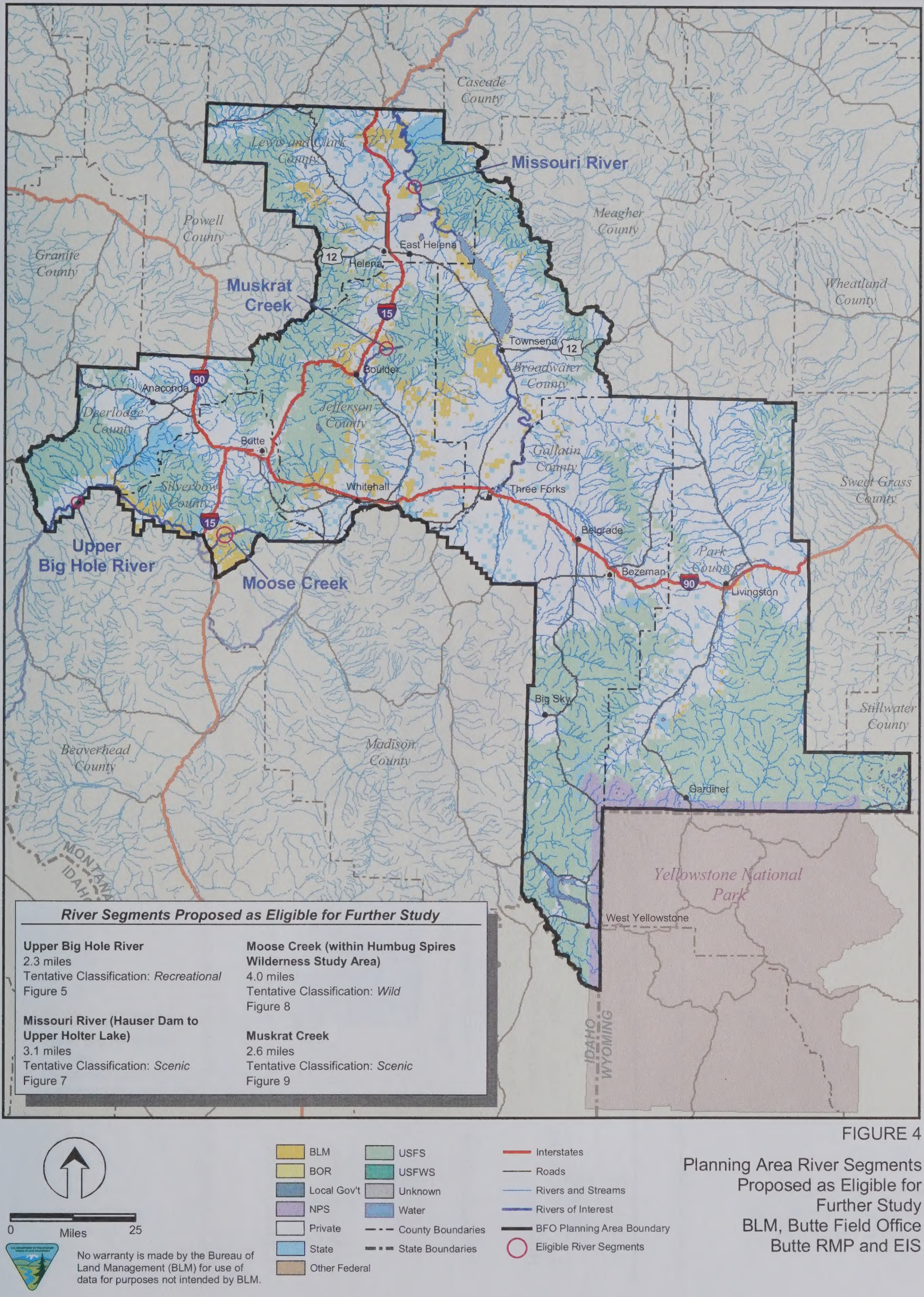
FIGURE 3

Planning Area Rivers with Eligible Segments BLM, Butte Field Office Butte RMP and EIS


Cascade County
Lewis and Clark County
Missouri River
Meagher County
Powell County
Granite County
East Helena
12
Helena
Muskrat Creek
15
Wheatland County
Townsend
12
Boulder
Broadwater County
90
Anaconda
Deerlodge County
Jefferson County
Butte
Gallatin County
Silverbow County
Whitehall
Three Forks
Sweet Grass County
Upper Big Hole River
15
Moose Creek
Belgrade
Park County
Bozeman
90
Livingston
Big Sky
Stillwater County
Beaverhead County
Madison County
Gardiner
MONTANA
IDAHO
Yellowstone National Park
West Yellowstone
IDAHO
WYOMING
0
Miles
25
BLM
BOR
Local Gov't
NPS
Private
State
Other Federal
USFS
USFWS
Unknown
Water
County Boundaries
State Boundaries
Interstates
Roads
Rivers and Streams
Rivers of Interest
BFO Planning Area Boundary
Eligible River Segments

River Segments Proposed as Eligible for Further Study

Upper Big Hole River
2.3 miles
Tentative Classification: *Recreational*
Figure 5

Missouri River (Hauser Dam to Upper Holter Lake)
3.1 miles
Tentative Classification: *Scenic*
Figure 7

Moose Creek (within Humbug Spires Wilderness Study Area)
4.0 miles
Tentative Classification: *Wild*
Figure 8

Muskrat Creek
2.6 miles
Tentative Classification: *Scenic*
Figure 9

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FIGURE 4

Planning Area River Segments Proposed as Eligible for Further Study
BLM, Butte Field Office
Butte RMP and EIS

Table 1
Eligible River Segments and Tentative Classification

Segment	General Location	Legal Description[1]	Length	Outstandingly Remarkable Values	Free-Flowing?	Tentative Classification	Proposed Boundary
1. Upper Big Hole River	About 11 miles west of Dickie Bridge Recreation Area and 16 miles northeast of town of Wisdom	T1N R13W Sec 8, 17, 18, 19, Deerlodge County	2.3 miles **(Figure 5)**	Recreational Fish	Yes	Recreational	0.25-mile on each side
2. Missouri River	Hauser Dam to Upper Holter Lake	T12N R3W Sec 13 and T12N R2W Sec 19, 29, 30 Lewis and Clark County	3.1 miles **(Figure 6)**	Recreational Wildlife Scenic	Yes	Scenic	0.25-mile on each side
3. Moose Creek	Entire creek length within Humbug Spires Wilderness Study Area	T1S R8W Sec 9, 10 Silver Bow County	4.0 miles **(Figure 7)**	Scenic Recreational	Yes	Scenic	0.25-mile on each side
4. Muskrat Creek	About 5 miles northeast of town of Boulder	T7N R3W Sec 31, 32, 33 Jefferson County	2.6 miles **(Figure 8)**	Fish	Yes	Scenic	0.25-mile on each side

[1] T=Township, N=North, W=West, R=Range, Sec=Section, Montana Principal Meridian

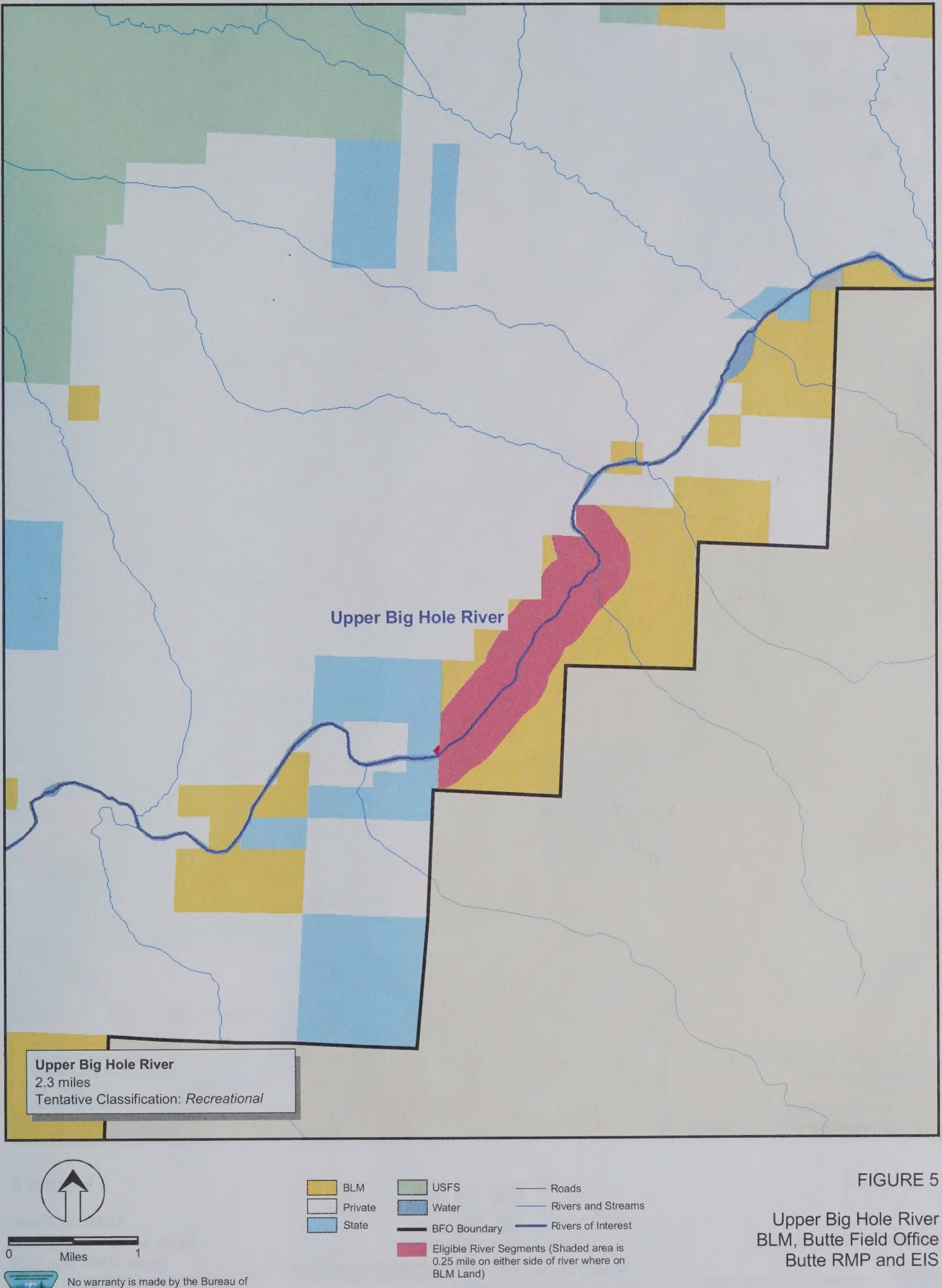
Upper Big Hole River
Upper Big Hole River
2.3 miles
Tentative Classification: *Recreational*
0
Miles
1
BLM
Private
State
USFS
Water
BFO Boundary
Eligible River Segments (Shaded area is 0.25 mile on either side of river where on BLM Land)
Roads
Rivers and Streams
Rivers of Interest

FIGURE 5

Upper Big Hole River
BLM, Butte Field Office
Butte RMP and EIS

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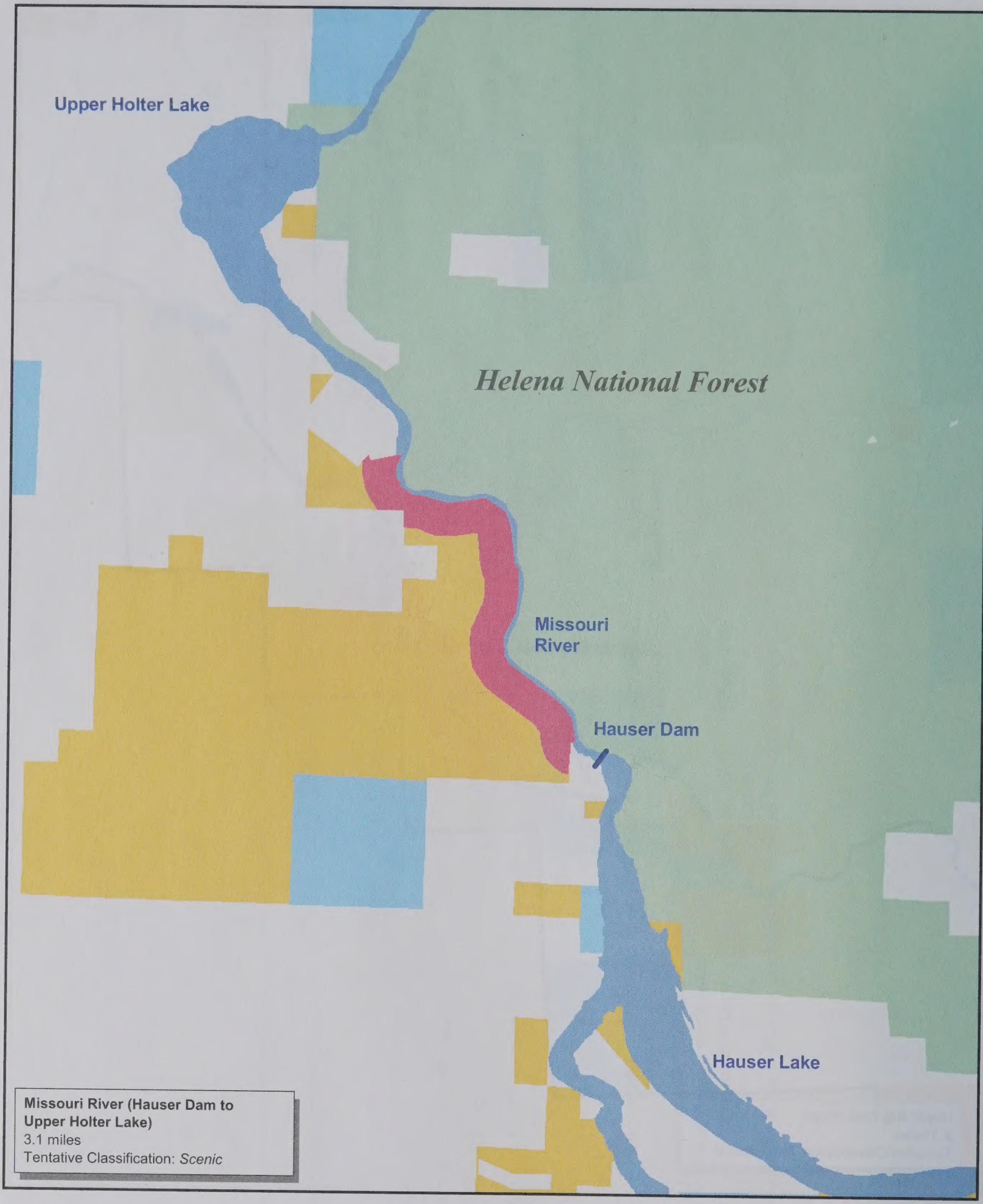
Upper Holter Lake
Helena National Forest
Missouri River
Hauser Dam
Hauser Lake
Missouri River (Hauser Dam to Upper Holter Lake)
3.1 miles
Tentative Classification: Scenic
0
Miles
1
🟨 BLM
▨ Local Gov't
☐ Private
🟦 State
🟩 USFS
🟦 Water
— BFO Boundary
🟥 Eligible River Segments (Shaded area is 0.25 mile on either side of river where on BLM Land)

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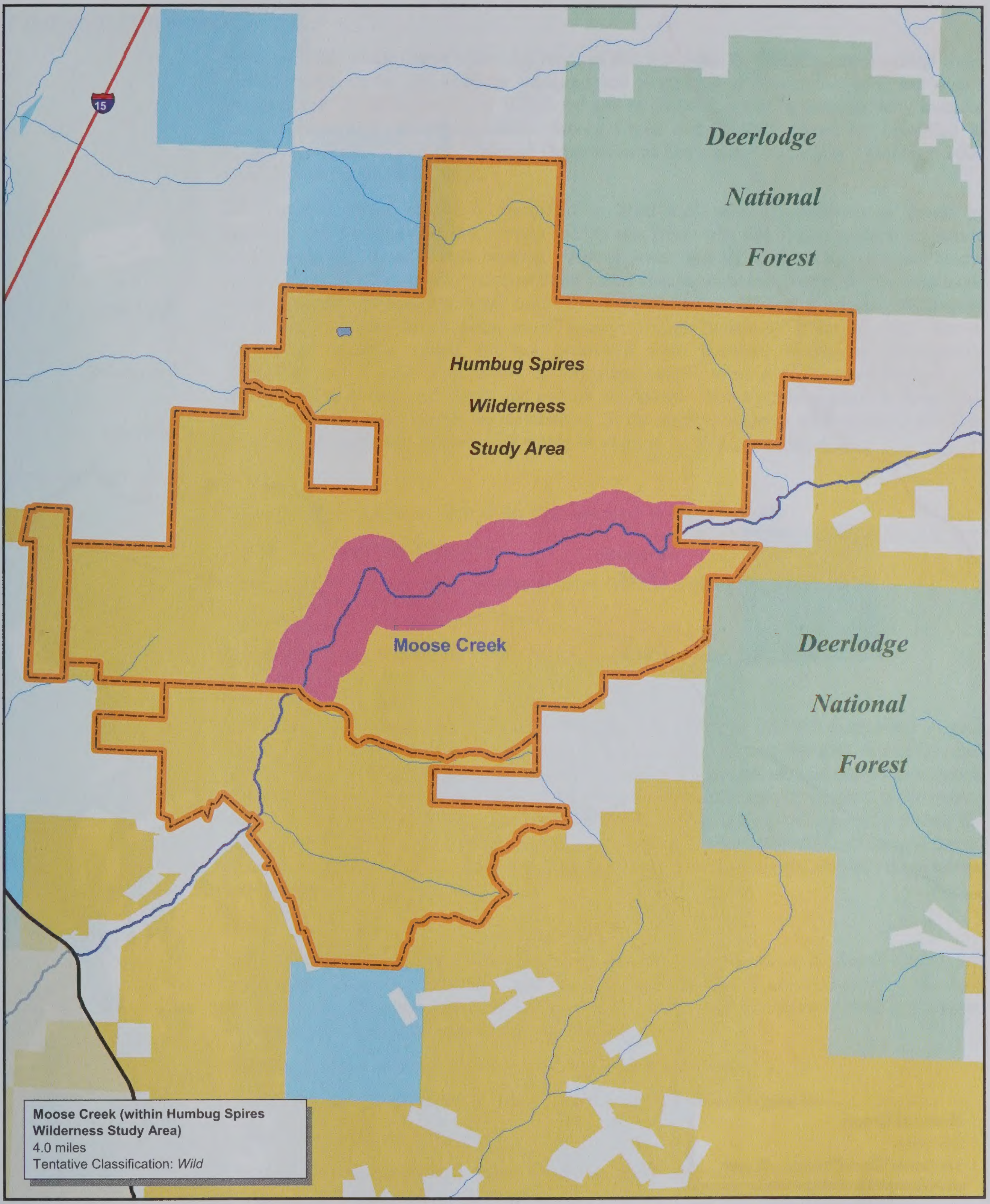
FIGURE 6

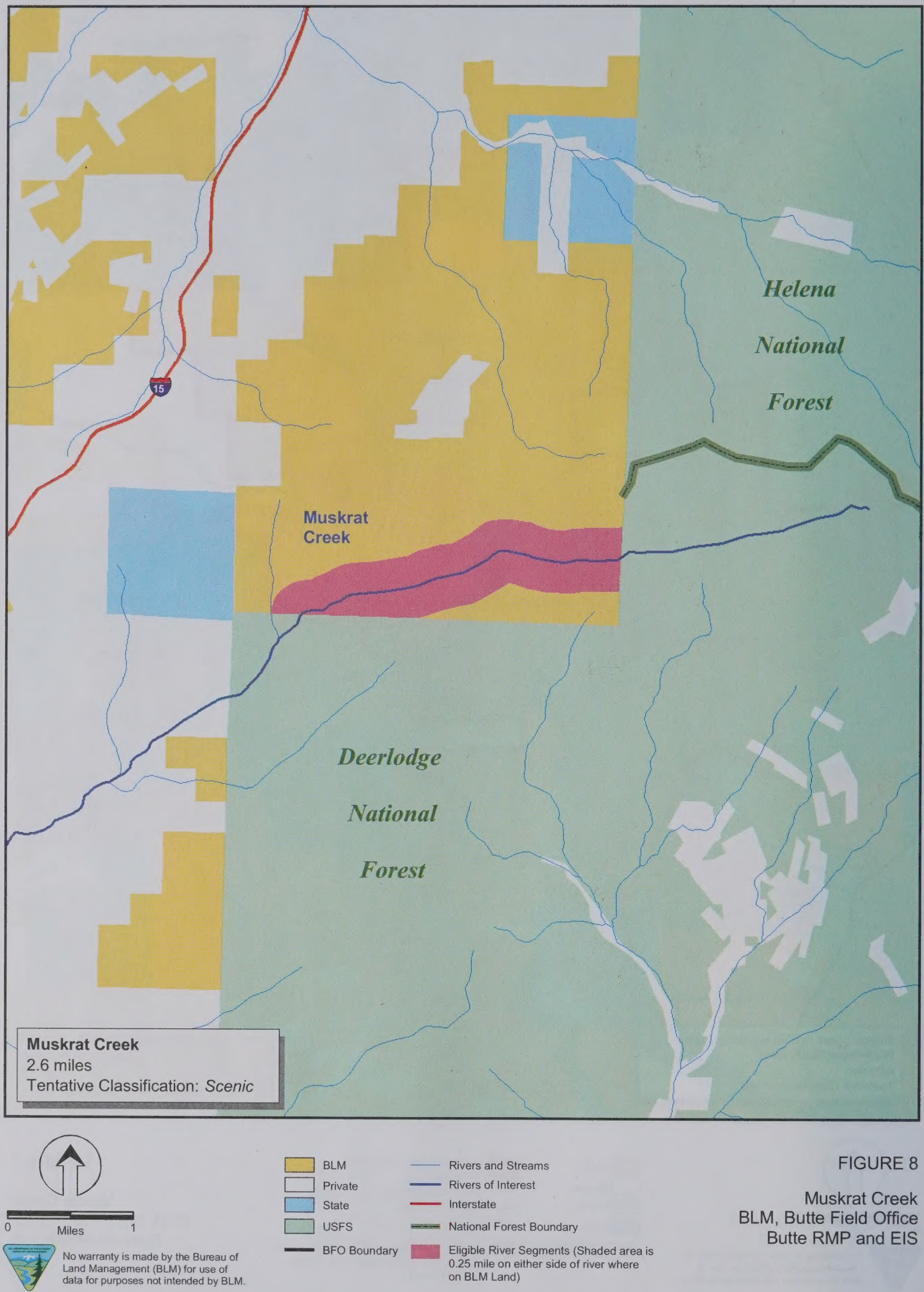
Missouri River
BLM, Butte Field Office
Butte RMP and EIS


15
Deerlodge National Forest
Humbug Spires Wilderness Study Area
Moose Creek
Deerlodge National Forest
Moose Creek (within Humbug Spires Wilderness Study Area)
4.0 miles
Tentative Classification: *Wild*
0 Miles 1
🟨 BLM
☐ Private
🟩 USFS
🟦 State
BFO Boundary
Humbug Spires Wilderness Study Area
Rivers and Streams
Rivers of Interest
Interstate
🟥 Eligible River Segments (Shaded area is 0.25 mile on either side of river where on BLM Land)

No warranty is made by the Bureau of Land Management (BLM) for use of data for purposes not intended by BLM.

FIGURE 7

Moose Creek
BLM, Butte Field Office
Butte RMP and EIS


15
Muskrat Creek
Helena National Forest
Deerlodge National Forest
Muskrat Creek
2.6 miles
Tentative Classification: Scenic
0 Miles 1
🟨 BLM
☐ Private
🟦 State
🟩 USFS
BFO Boundary
Rivers and Streams
Rivers of Interest
Interstate
National Forest Boundary
🟥 Eligible River Segments (Shaded area is 0.25 mile on either side of river where on BLM Land)

No warranty is made by the Bureau of Land Management (BLM) for use of data for purposes not intended by BLM.

FIGURE 8

Muskrat Creek
BLM, Butte Field Office
Butte RMP and EIS

IMPAIRED WATER BODIES

Section 303(d) of the Clean Water Act requires that water bodies violating state or tribal water quality standards be identified as impaired and placed on a 303(d) list. It is the state's responsibility to develop its own 303(d) list and to establish a total maximum daily load for the parameter(s) causing impairment. Moose Creek and Muskrat Creek are identified as impaired water bodies on the Montana Department of Environmental Quality's (MDEQ) 2004 Draft 303(d) list (MDEQ 2005).

An impaired stream cannot be classified as Wild but could be classified as Scenic or Recreational. The classification criteria specify that rivers will not be precluded from Scenic or Recreational classification because of poor water quality at the time of their study, provided that a water quality improvement plan exists or is being developed in compliance with applicable Federal and State laws. The MDEQ has established a schedule to prepare water quality improvement plans on all impaired water bodies by 2007. As such, Moose Creek and Muskrat Creek are not precluded from tentative Scenic or Recreational classifications. Further evaluations, as described below, show a discrepancy between the MDEQ listing of Muskrat Creek and current conditions. Further investigation is necessary, and this segment may need to be reclassified. If the eligible segment is determined not to be water quality impaired, this segment would be eligible for Wild classification.

TENTATIVE CLASSIFICATION

Tentative classification of each of the four segments is listed in Table 1.

Segment 1: Upper Big Hole River

Eligible segment length on BLM-administered lands: 2.3 miles (Figure 5)

Tentative Classification: Recreational

The outstandingly remarkable values for this segment are described below.

Recreational

This river reach is rated as a Class 1, Blue Ribbon Fisheries. MFWP assessed this sport fisheries value based on a combination of fish abundance, fishing pressure, aesthetics, and access. This is the highest rating given for state rivers. This reach attracts numerous national and international visitors, and out-of-state visitors represent about 30 percent of the annual use each year (MFWP 2004a). The area is famous for its fly-fishing, especially during the salmon/stone fly hatches. Other quality recreational uses, although not outstandingly remarkable, include river floating (May through July), hiking, camping, wildlife observation, and hunting.

Fish

Fish species include rainbow trout *(Oncorhynchus mykiss),* brown trout *(Salmo trutta),* and brook trout *(Salvelinus fontinalis),* and the State-listed and BLM sensitive species, Montana arctic grayling *(Thymallus arcticus montanus).* This is the only free-flowing river in the lower 48 states that supports the Montana arctic grayling.

Segment 2: Missouri River (Hauser Dam to Upper Holter Lake)

Eligible segment length on BLM-administered lands: 3.1 miles (Figure 6)

Tentative Classification: Scenic

The outstandingly remarkable values for this segment are described below.

Recreational

This river reach is rated as a Class 1—Blue Ribbon Fisheries, which is the highest rating given for state rivers. MFWP assessed this sport fisheries value, based on a combination of fish abundance, fishing pressure, aesthetics, and access. This reach attracts numerous national and international anglers for brown and rainbow trout and Kokanee salmon *(Oncorhynchus nerka kennerlyi).*

This reach is also part of the Lewis and Clark National Historic Trail. The Lewis and Clark Expedition passed through this reach on July 20, 1805, on their westward trek to the Pacific Ocean. On that day, Meriwether Lewis was traveling along the river, while William Clark was exploring the uplands and hunting game. This reach is expected to receive higher visitation from out-of-state residents during the bicentennial of the Lewis and Clark Expedition in 2005 and 2006. The corridor is highly natural, and for the most part still appears as seen by the Expedition.

Other high-quality recreational opportunities associated with this river segment and the adjoining BLM lands include river floating, primitive camping, hiking, wildlife observation, and big-game hunting.

Wildlife

There is significant habitat for regionally important populations of Federally-listed threatened bald eagle (*Haliaeetus leucocephalus*), bighorn sheep (*Ovis canadensis*), golden eagle (*Aquila chrysaetos*), peregrine falcon (*Falco peregrinus anatum),* and osprey (*Pandion haliaetus*).

Scenic

Transitions in geology and topography provide outstanding vistas with stark contrasts. The upstream portion of the segment is bounded by steep colorful canyon walls that transition into rolling hill topography as one proceeds downstream. The alternating distant vistas contrasted with steep canyon walls provide a unique visual experience. The area is rated A for scenic quality, as defined in the BLM *Visual Resource Inventory Handbook*, H-8410-1 (BLM 1986).

Shoreline development criteria for Wild designation requires that development be primitive, with little evidence of human activity. The presence of a few inconspicuous structures, particularly those of historic or cultural value, is acceptable. However, due to the development visible from the river along this segment (e.g. the Beaver Creek parking area and a pit toilet) the Missouri River is not suitable for Wild designation.

Segment 3: Moose Creek

Eligible segment length on BLM-administered lands: 4.0 miles (Figure 7)

Tentative Classification: Scenic

The outstandingly remarkable values for this segment are described below.

Scenic

The scenic quality of this area is rated A. The combination of contrasting land features with pronounced rock spires, irregular topography, and the variety of color patterns along this creek corridor provide outstanding visual values that are managed as a Visual Resource Management (VRM) Class I area. The area immediately adjacent to the creek varies from wooded to meadow with a meandering creek and a well-developed riparian area. Upstream of where the trail diverges from the creek, it becomes steeper with water cascading through boulders. The creek returns to a meadow-type creek near the upstream end of the segment where it enters private land.

Recreational

The outstanding recreation opportunities associated with Moose Creek and the adjoining lands in the Humbug Spires Wilderness Study Area (WSA) attract visitors both nationally and internationally. The area was one of the first BLM Primitive Areas to be established and is protected as a WSA. This area was studied and recommended for wilderness in 1981.

The most popular forms of recreation include rock climbing, sightseeing, hiking, backpacking, hunting, wildlife observation, and primitive camping. Of these, the most unique and outstanding opportunity is for rock climbing. The granite spires provide some of the highest quality hard-rock climbing in Montana. There are about 10 spires between 300 and 600 feet high, and an additional 50 others that range between 50 and 300 feet. The spires are not located within the Moose Creek study corridor, but the hiking trail through the corridor provides access to the spires.

Hiking opportunities were also assessed as excellent in the Humbug Spires WSA, given the diversity in landform types and vegetation. Hiking challenges range from gentle maintained trails to adventurous game trails with numerous elevation changes. Hikers are afforded high-quality scenic views, wildlife observations, colorful wildflowers, remote campsites, and trout fishing along this perennial stream. The scenic and recreational values of the study corridor are not duplicated in any other proposed or existing wilderness area. The experiences to be found when visiting the Humbug Spires are unique and cannot be compared to those found anywhere else in the region (BLM undated).

The eligible segment's tentative classification would have been Wild if it were not listed as an impaired water body on MDEQ's Draft 2004 and Final 2002 303(d) list (MDEQ 2005), as discussed above in the section, *"Inventory Phase for the Butte RMP Revision, Impaired Water Bodies."* The portion of Moose Creek south of the Humbug Spires WSA is not included in the eligible segment because it does not contain any outstandingly remarkable values.

Segment 4: Muskrat Creek

Eligible segment length on BLM-administered lands: 2.6 miles (Figure 8)

Tentative Classification: Scenic

The outstandingly remarkable values for this segment are described below.

Fish

Muskrat Creek, a tributary to the Boulder River, provides significant habitat for westslope cutthroat trout *(Oncorhynchus clarki lewisi)*. Genetically pure westslope cutthroat trout are estimated to exist in only two to four percent of their historic stream distribution (Montana Chapter of the American Fisheries Society 2004). Muskrat Creek contains genetically pure westslope cutthroat trout, and the headwaters of the stream are in a roadless area of BLM- and Forest Service-administered lands that is essentially primitive in nature.

MFWP, the BLM, and the USFS are collaborating to conserve westslope cutthroat trout in Muskrat Creek. A wooden barrier was constructed near the Forest Service boundary at river mile 7.6 in 1997. Since 1996, brook trout have been annually removed (using electrofishing) from Muskrat Creek upstream of the barrier to a natural barrier at river mile 9. In 1997, native westslope cutthroat trout also were relocated above the natural barrier (formerly a fishless section of stream). The westslope cutthroat trout relocated above the natural barrier survived and reproduced in the upper basin, and, by 2002, westslope cutthroat trout had expanded upstream to the headwaters (approximately river mile 13.5), as well as downstream throughout the stream.

Brook trout have been successfully removed between the manmade barrier and natural barrier. In the summer of 2003, only 18 brook trout were found in July, and no brook trout were captured during an extensive effort of four electrofishing passes in October. All the brook trout captured during July 2003 were age two and older, confirming that no brook trout successfully recruited to the population during the past two to three years. Approximately 4.5 miles of Muskrat Creek is once again considered to have a healthy population of westslope cutthroat trout. No brook trout were captured in 2004 or 2005 indicating that brook trout have been eradicated upstream of the constructed barrier. The Muskrat Creek population is considered the most secure and strongest westslope cutthroat trout population in the Elkhorn Mountains. Sampling will continue in the future.

Riparian vegetation is in excellent condition along Muskrat Creek on BLM- and USFS-administered lands. The riparian vegetation provides exceptionally high-quality habitat for numerous wildlife species, including critical winter habitat for elk *(Cervus elaphus)*.

FINAL ELIGIBILITY DETERMINATIONS

Public comment will be accepted on eligibility recommendations in this report. The BLM will review comments and make adjustments if comments show eligibility criteria are not met. This could affect final decisions on eligible rivers and ultimately suitability decisions.

SUITABILITY STUDY PHASE FOR THE BUTTE RMP REVISION

The preliminary suitability evaluation is completed as the Draft RMP is prepared. Impacts that would occur from designation or nondesignation of the eligible river segments then would be analyzed in the EIS associated with the RMP. Public review and comment on preliminary suitability determinations included in the Draft RMP/EIS would be considered before the BLM makes final suitability determinations in the proposed RMP.

The WSR Act requires that interim management measures be developed to protect the free-flowing nature, outstandingly remarkable values, and recommended classification of suitable segments until Congressional action regarding designation is taken. Guidelines for interim management are included in Appendix C.

SUITABILITY CRITERIA FOR ELIGIBLE SEGMENTS

This section contains a discussion of the suitability factors related to each of the four eligible segments.

Segment 1: Upper Big Hole River

Length within Planning Area: 2.3 miles (Figure 5)

Tentative Classification: Recreational

Proposed Boundary: Approximately 0.25-mile from river bank on either side of the river.

1. Characteristics that do or do not make the river a worthy addition to the NWSRS:

The eligible segment contains recreational and fisheries outstandingly remarkable values, making the segment worthy of addition to the NWSRS. This segment of the Big Hole River provides important habitat for Montana arctic grayling.

A river ford used predominantly by hunters accessing the Beaverhead-Deerlodge National Forest is present within the segment. The feasibility of crossing varies depending on time of year and flows. Numerous vehicles have been mired while crossing, requiring a tow to extract them from the river. Consequently, the presence of this ford presents a safety hazard to many users. Use of this ford potentially impacts the Big Hole River water quality by increasing sediment, disturbing the bank, and leaking of oil and gas. Additionally, weeds are spread downstream as the river washes the undercarriage of vehicles.

There are no known water quality issues with this segment of the Big Hole River. Downstream of the eligible segment, from Divide Creek to the confluence with the Jefferson River, the Big Hole River has been identified as water quality impaired by the MDEQ 303d list (MDEQ 2005). This listing does not pertain to the eligible segment.

2. The status of landownership, minerals, use in the area, including the amount of private land involved and associated or incompatible uses:

Landownership within the 0.25-mile study corridor is predominantly Federal. The BLM manages 678 acres (89 percent). The BLM manages lands on both sides of the river for almost the entire segment (Figure 5). A private landowner controls the land along the western bank for approximately 0.25-mile at the northern end of the segment. There are two additional points where private land is within the 0.25-mile study corridor but not adjacent to the river along the western side.

The area has low oil and gas potential and very limited lode gold potential. There are no current or anticipated minerals uses in the area.

3. Reasonably foreseeable potential uses of the land and related waters that would be enhanced, foreclosed, or curtailed if the area were included in the NWSRS and values that would be foreclosed or diminished if the area is not protected as part of the NWSRS:

Grazing is permitted along this entire segment. Potential impacts from livestock grazing within the river corridor may include increased sedimentation resulting from bank erosion, transport of weed species, and increased nutrient input in the river. Designation of this segment could result in increased monitoring to ensure grazing activities are not adversely impacting the recreational and fisheries outstandingly remarkable values. If adverse impacts are observed or anticipated, management of grazing in this segment would be more restricted on BLM land. Grazing occurring upstream on private land would not be subject to BLM's authority.

There is no active timber harvest occurring within the corridor. If the segment were included in the NWSRS, timber harvest within the study corridor would be prohibited.

Currently, recreational use within the study corridor consists of occasional camping and fishing. There are no developed facilities present. In addition, the ford described earlier provides hunting access to the Beaverhead-Deerlodge National Forest. In general, use is relatively light, the area is not well known outside the Butte area. Designation of this segment would bring national recognition to this segment and would likely attract visitors from a much greater area. Because of the small acreage of BLM land, increased use would be difficult to disperse and manage. This could cause significant negative impacts to the riparian habitat and stream and reduce the value of this segment as a National WSR. Consequently, camping and fishing access would either need to be developed and intensely managed or restricted as popularity increases.

4. Federal or State agency that will administer the river should it be added to the NWSRS.

If the river were added to the NWSRS, this segment would be administered by the BLM.

5. Federal, State, Tribal, local, public, or other interest in designating or not designating the river, including the extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state, local, or other agencies and individuals:

No comments were received during the scoping period pertaining to designation of this segment. Other Federal agencies, the State, local, public and other interests will have the opportunity to review and comment on this report. Any interest in designating or not designating would be identified during this period, and this section would be revised accordingly.

6. Estimated cost to the United States of acquiring necessary lands, interests in lands, and administering the area should it be added to the NWSRS:

The 2.3-mile segment being studied is predominantly Federal land. The outstandingly remarkable values could be protected or enhanced without further acquisition of land. The BLM would consider the acquisition of fee title or conservation easements on the remaining 27 acres of private land within the 0.25-mile study corridor. Cost of acquisition would be approximately $1,000 per acre.

7. A determination of the degree to which the State or its political subdivision(s) might participate in the preservation and administration of the river should it be proposed for inclusion in the NWSRS:

MFWP would continue to regulate floating outfitters. Regulations currently limit the days of the week outfitters are permitted to float certain sections of the Big Hole River. These regulations serve to maintain the recreational outstandingly remarkable values and reduce fishing pressure in certain areas.

The State controls a small parcel of land immediately upstream of the segment. Currently, State management of this parcel is compatible with the protection and enhancement of the recreational and fisheries outstandingly remarkable values within the eligible segment. Because it is immediately upstream of the eligible segment, activities on the State parcel could impact water quality within the eligible segment. Management would need to be coordinated with the State.

8. The Federal agency's ability or other mechanisms to protect and manage the identified river related values other than WSR designation:

The BLM currently has a Big Hole River Plan which describes management for all BLM parcels along the river, including the eligible segment. This plan provides management measures which would protect the outstandingly remarkable values in the eligible segment. Management measures from the Big Hole River Plan include the following:

- Visual qualities on BLM lands as seen from the river will be maintained to protect recreation quality and scenic viewing in accordance with VRM Classifications. Currently, most of the corridor is managed on VRM Class II. Under this Classification, changes in the basic elements due to management action should not be evident within the landscape as seen from the river.
- Do not issue grazing leases on BLM parcels within the Recreation Management Area (RMA) that are currently unleased or not allotted.
- No surface occupancy stipulations within ¼ mile of the river or in critical seen areas should be established for new oil and gas leases. In addition, leases will be subject to vehicle use restrictions.
- All road construction on BLM lands within the RMA must be compatible with the specific management objectives of this plan.
- Enact travel restrictions within developed and undeveloped recreation sites as necessary to protect resources
- All BLM lands within a one mile corridor from each side of the river shall be retained in public ownership
- Acquire additional land within the RMA corridor as feasible to provide for increased recreational opportunities and protect scenic resource.
- Do no issue commercial recreation use permits on the Big Hole River and limit permits for commercial camps and other uses within the RMA based on available space and public uses.

This segment is categorized as a VRM Class II area. The management objective for Class II areas is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

The BLM, within the site specific travel plan is assessing management alternatives for the use of the ford, which presents both water quality and safety concerns. Current management allows unrestricted crossings, which could adversely affect water quality and therefore fisheries values in the segment. Management changes such as prohibiting use of the ford or limiting use to game retrieval would only reduce the potential degradation of water quality and bank erosion. River flows within the upper reach are subject to seasonal moisture conditions and existing water rights. These conditions typically reduce flow in late summer to levels that impact fishery resources and prevent recreational floating.

9. An evaluation of the adequacy of local zoning and other land use controls in protecting the river's outstandingly remarkable values by preventing incompatible development:

The 27 acres (4 percent) of private land would be subject to local zoning controls. Local zoning would not be adequate to prevent new construction on the private land holdings within the WSR study corridor. No new development is allowed within 150 feet of the high water mark along the Big Hole River, and a permit is required for construction within 500 feet of the high water mark. It is possible, that construction would be permitted within the ¼ mile study corridor. All 27 acres are within the floodplain.

10. Support or opposition to designation:

As of the time of the preliminary suitability determination there has been no known support or opposition to designation of this segment. Any comments received pertaining to this segment during the review of the draft RMP would be incorporated into this report and considered when making a final suitability determination.

11. Historical or existing rights that could be adversely affected with designation:

There are no known historical or existing rights that would be affected with designation.

12. The consistency of designation with other agency plans, programs, or policies in meeting regional objectives:

Designation of this segment would be consistent with the Big Hole River Management Plan, and VRM II classification, provided designation does not result in a significant increase in use. However, national recognition of this segment could result in a significant increase in the number of people visiting this segment, which could be incompatible with these other plans, given the high riparian and natural value of the area.

13. The contribution to a river system, watershed, or basin integrity:

The eligible segment provides important habitat for salmonid fish species, including the Montana arctic grayling. Aquatic habitat in this segment helps support the fish populations throughout the river system.

Segment 2: Missouri River (Hauser Dam to Upper Holter Lake)

Length within Planning Area: 3.1 miles (Figure 6)

Tentative Classification: Scenic

Proposed Boundary: Approximately 0.25-mile on from river bank on either side of the river.

1. Characteristics that do or do not make the river a worthy addition to the NWSRS:

The outstandingly remarkable recreational, scenic and wildlife values associated with this segment make it a worthy addition to the NWSRS. These values are described in detail in the eligibility portion of this report.

Flows are controlled by releases from Canyon Ferry and Hauser Dams, located near the segment's upstream end. The amount of water released is governed by the Federal Energy Regulatory Commission (FERC) license for operations with the Pennsylvania Power and Light Corporation (PPL) Montana. The FERC license provides adequate flows for recreational and fisheries needs. These flows are sufficient to protect the recreational, fisheries, and scenic outstandingly remarkable values described for this segment. The dam is only visible at the very upstream end of this segment. The river immediately takes a bend through the canyon, obscuring view of the dam. Generally, good water quality supports high quality fisheries.

The segment has limited access and very little development along the shore. These relatively primitive conditions provide a setting similar to what Lewis and Clark would have experienced during their journey westward.

The USFS maintains a small access area within the 0.25-mile study corridor at the mouth of Beaver Creek. This facility provides fishing access and consists of a toilet, small parking lot, and fence. During the site visit in August 2005, this area was barely visible from the river. Vegetation obscured views of the fence and parking lot, but the toilet was visible for a brief period where there was a gap in vegetation. The area is likely more visible during the fall and winter when foliage is not as thick. This is a relatively minor intrusion on the scenic values of this segment. Overnight camping at this site is not permitted.

2. The status of landownership, minerals, use in the area, including the amount of private land involved and associated or incompatible uses:

Almost all lands (93 percent) within 0.25-mile of the river bank along this segment are Federally-managed. The USFS, Helena National Forest manages lands along the eastern bank for the entire length. The BLM manages all lands along the western bank for the entire segment length. There is a small private landholding located near the downstream end of the segment west of the river channel approximately 1/8-mile inland from the shore. This private landholding is not essential to the protection and enhancement of outstandingly remarkable values and could be excluded from the designated corridor. These lands are not at risk to development given the conditions of an existing easement on the property.

The USFS has found this segment to be eligible for inclusion in the NWSRS but has not completed a suitability study.

Land uses include some permitted grazing on BLM land along the western shoreline. The area is not fenced, and cattle have access to the river. It appears that grazing pressure along this segment is relatively light because rough terrain limits access to the river corridor.

This segment of the Missouri River has no significant mineral potential. The general area has moderate potential for oil and gas discoveries, but exploration is not likely to take place along the river. There are no current mineral resource uses along this segment.

3. Reasonably foreseeable potential uses of the land and related waters that would be enhanced, foreclosed, or curtailed if the area were included in the NWSRS and values that would be foreclosed or diminished if the area is not protected as part of the NWSRS:

Although unlikely, any increase in the height of Holter Dam would be prohibited if the river were designated. Such an increase would change the free-flowing nature of the river in this segment. Increasing the height of Holter Dam and the resulting increase in the size of Holter Lake and Upper Holter Lake is not likely to occur and may be physically infeasible because of the area's topography and the number of residences and other structures located along the shores of Holter Lake and Upper Holter Lake.

If the segment were to become part of the NWSRS, potential changes in Hauser Dam operations, outside the current FERC license, which could be considered the next time the FERC license is renewed would need to consider how such change could affect the outstandingly remarkable values. Significant reduction or increase in water releases from Hauser Dam could adversely affect the recreational, scenic, and wildlife values associated with this segment. As a Federal agency, FERC would need to ensure protection of these values when relicensing.

Grazing on the BLM land could be subject to increased restrictions if the segment were included in the NWSRS. The BLM would monitor the effects of cattle access to the river to ensure that grazing use is not adversely affecting the outstandingly remarkable values. If restrictions are necessary to protect river values, the BLM would work with the grazing allotment permittee to establish adequate restrictions.

Designation of this segment would prevent the sale of Federal lands within the corridor and would prevent extensive development along its shoreline. This segment is part of the Lewis and Clark National Historic Trail and is currently in a condition similar to how it was during their expedition. Not designating this segment could potentially result in changes to the landscape, altering the primitive nature of this segment.

4. Federal or State agency that will administer the river should it be added to the NWSRS.

Administration of this segment would ultimately be decided by Congress. All lands included in the river corridor are Federally-managed. Administration would likely be joint management between BLM and USFS, as each agency currently manages half of the corridor.

5. Federal, State, Tribal, local, public, or other interest in designating or not designating the river, including the extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state, local, or other agencies and individuals:

The FERC and PPL Montana would have an interest in the designation of this segment as it pertains to water releases from Hauser Dam. Current operations, as identified in the FERC license, provide adequate flows to maintain the recreational, wildlife, and scenic outstandingly remarkable values associated with this segment. Although these flow requirements are not likely to change, relicensing efforts in the future would need to consider the protection of outstandingly remarkable values.

6. Estimated cost to the United States of acquiring necessary lands, interests in lands, and administering the area should it be added to the NWSRS:

All lands adjacent to the river segment are Federally-managed. Approximately 68 acres of land within 0.25-mile of the river are privately owned. This includes the private lands within 0.25-mile both upstream and downstream of the segment. The BLM would be capable of managing for the protection and enhancement of the outstandingly remarkable values without acquiring any lands. However, if BLM seeks acquisition of this small parcel of private land in order to have a continuous 0.25-mile corridor, land prices are approximately $600 per acre.

The private parcel at the upstream end is owned by PPL Montana and is used for maintenance of the dam; acquisition is not likely.

Lands upstream would not be available or necessary to purchase as property is part of an administrative site owned by PPL Montana for operations at the dam. This utility company provides for river launching at this site which would compliment the management of the WSR designation. The parcel downstream would not be necessary to purchase to protect resource values as the private land is under an easement which prohibits residential development.

7. A determination of the degree to which the State or its political subdivision(s) might participate in the preservation and administration of the river should it be proposed for inclusion in the NWSRS:

MFWP would likely continue to manage for the recreational fisheries in this segment. This would be complimentary to the recreational outstandingly remarkable value that is linked to fishing opportunities.

8. The Federal agency's ability or other mechanisms to protect and manage the identified river related values other than WSR designation:

The BLM is able to manage its lands along the west bank of the segment for the protection of identified river-related values through its RMP. The eastern bank is managed by the USFS, Helena National Forest. River designation would provide for common goals and management objectives for the two Federal agencies.

9. An evaluation of the adequacy of local zoning and other land use controls in protecting the river's outstandingly remarkable values by preventing incompatible development:

This criterion is not applicable because all lands adjacent to this segment are Federally-managed.

10. Support or opposition to designation:

This is the suitability study report. During the scoping period, no support or opposition to designation of this segment was submitted. The public review of the draft RMP would provide an opportunity for other agencies and the public to review the preliminary findings and voice opposition or support.

11. Historical or existing rights that could be adversely affected with designation:

There are no known historic or existing rights that would be adversely affected with designation.

12. The consistency of designation with other agency plans, programs, or policies in meeting regional objectives:

Designation of this segment would be consistent with the objectives of the BLM's Butte RMP.

Designation of this segment would compliment the fisheries and recreational goals of the MFWP.

The USFS has not completed a suitability study for this segment. Designation would be consistent with the USFS eligibility determination, but successful management would depend on a similar suitability determination from USFS.

13. The contribution to a river system, watershed, or basin integrity:

Almost the entire flow in this segment is provided by releases from Hauser Dam. Only a small amount of water is added from the Beaver Creek tributary. This segment provides a very important contribution to the fisheries in the Missouri River watershed from Hauser Dam to Holter Dam downstream by providing important spawning habitat.

Segment 3: Moose Creek

Length within Planning Area: 4.0 miles (Figure 7)

Tentative Classification: Scenic

Proposed Boundary: Approximately 0.25-mile on from river bank on either side of the river.

1. Characteristics that do or do not make the river a worthy addition to the NWSRS:

Moose Creek contains outstandingly remarkable scenic and recreational values, as described in the eligibility section of this report, which make the river a worthy addition to the NWSRS.

Moose Creek from the headwaters to the mouth of the creek at the Big Hole River is identified as water quality impaired on the MDEQ 303d list (MDEQ 2005). The probable causes of impairment are dewatering and flow alteration. The probable sources of impairment are agriculture and crop-related sources. There is extensive agriculture upstream of the eligible segment located on private land. The BLM does not have authority to regulate activities on these lands and is subject to receive water from these areas into Moose Creek. The creek is categorized as 4C – Total Maximum Daily Loads (TMDLs) are not required; no pollutant-related use impairment identified. As a result, no plan for improving water quality in this segment is being developed.

2. The status of landownership, minerals, use in the area, including the amount of private land involved and associated or incompatible uses:

The entire eligible segment is located on BLM land within the Humbug Spires WSA. Upstream of the eligible segment, Moose Creek passes through private land. The private land is predominantly used for cattle grazing.

The area is currently used predominantly for recreational purposes such as hiking, camping, and providing access to climbing areas. These uses are compatible with the protection and enhancement of the segment's outstandingly remarkable values.

This segment has very low oil and gas potential. There are some known placer deposits along the creek and there is some limited potential for the discovery of lode gold deposits. There are no current mineral resource uses along this segment.

3. Reasonably foreseeable potential uses of the land and related waters that would be enhanced, foreclosed, or curtailed if the area were included in the NWSRS and values that would be foreclosed or diminished if the area is not protected as part of the NWSRS:

If the Humbug Spires WSA continues to be a WSA or becomes a designated Wilderness, reasonably foreseeable potential land uses would be compatible with the protection and enhancement of the segment's outstandingly remarkable values. If the WSA designation is removed by Congress without designating it as Wilderness, then the area could be opened to an array of potential land uses. If the segment were designated as part of the NWSRS, cattle grazing would continue to not occur along this segment.

Extraction of mineral in the area does not currently occur in accordance with the WSA designation. If the WSA designation were removed and the segment were designated in the NWSRS, mineral leasing and extraction would continue to be restricted.

4. Federal or State agency that will administer the river should it be added to the NWSRS.

The BLM, as the sole land manager, would administer the river should it be added to the NWSRS.

5. Federal, State, Tribal, local, public, or other interest in designating or not designating the river, including the extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state, local, or other agencies and individuals:

The upstream landowner has not yet been contacted regarding this potential designation. It is expected that the landowner will review and comment on the suitability findings during the draft RMP review period. It is anticipated, given the necessity of the United States to acquire property or easements, that the landowner may be opposed to designation. Reasons for the necessity of acquisition are described in criteria 1 and 6.

6. Estimated cost to the United States for acquiring necessary lands, interests in lands, and administering the area should it be added to the NWSRS:

To adequately address water quality impairment resulting from upstream land uses, the United States would need to acquire the upstream lands either in fee title or through conservation easements. It is not anticipated that the upstream landowners would be willing sellers. Without acquisition, dewatering and flow alteration problems would continue to affect the eligible segment, in addition to water quality problems associated with cattle grazing. The cost of acquisition would be a minimum of $500 per acre, requiring 690 acres to be acquired. One option would be within ¼ mile of the stream for the entire length upstream of BLM, currently private to the USFS boundary.

7. A determination of the degree to which the state or its political subdivision(s) might participate in the preservation and administration of the river should it be proposed for inclusion in the NWSRS:

The land within the study corridor is entirely BLM administered. It is not anticipated that the State or its political subdivision would be required to participate in the administration of the river should it be proposed for inclusion in the NWSRS.

8. The Federal agency's ability or other mechanisms to protect and manage the identified river related values other than WSR designation:

Protection and enhancement of the recreational and scenic outstandingly remarkable values are currently provided by the areas designation as a WSA. The management goals and objectives within the Humbug Spires WSA are compatible with management as an eligible segment. WSA designation is temporary. Congress has the ability to either designate the area as Wilderness under the Wilderness Act, or remove the WSA designation entirely. If WSA designation is removed, the area would be managed in accordance with the RMP. Removal of WSA designation, without making it a designated Wilderness area, could open the area to land uses such as timber harvest and mineral activity. Introduction of these land uses in the area could degrade the riparian corridor and result in impacts on the recreational and scenic outstandingly remarkable values that make the segment a worthy addition to the NWSRS.

BLM does not have the authority to regulate land uses upstream of the eligible segment. Water quality problems resulting from cattle grazing activities upstream would continue to occur.

9. An evaluation of the adequacy of local zoning and other land use controls in protecting the river's outstandingly remarkable values by preventing incompatible development:

Current local zoning and other land uses controls upstream of the eligible segment are not adequate to address the water quality issues.

10. Support or opposition to designation:

It is anticipated that the upstream landowner may be opposed to designation. Should the landowner provide comments either on the draft RMP or through direct communication with the BLM, this statement would be revised accordingly.

11. Historical or existing rights that could be adversely affected with designation:

There are no known historical or existing rights that could be adversely affected with designation.

12. The consistency of designation with other agency plans, programs, or policies in meeting regional objectives:

Designation would be consistent with current management prescriptions as a WSA and with the Butte RMP.

13. The contribution to a river system, watershed, or basin integrity:

Below the eligible segment, Moose Creek flows for several miles before entering the Big Hole River at Maiden Rock. Water in Moose Creek contributes to the water quality and quantity of the Big Hole River system.

Segment 4: Muskrat Creek

Length within Planning Area: 2.6 miles (Figure 8)

Tentative Classification: Scenic

Proposed Boundary: Approximately 0.25-mile on from river bank on either side of the river.

1. Characteristics that do or do not make the river a worthy addition to the NWSRS:

Muskrat Creek contains fisheries outstandingly remarkable values related to its population of genetically pure westslope cutthroat trout. MFWP, BLM, and USFS have actively removed eastern brook trout and have installed a barrier downstream to prevent non-westslope cutthroat trout from migrating into the segment.

The high-quality riparian corridor provides critical winter habitat for elk and serves as a migration corridor for elk, moose, and bear.

Water Quality

Muskrat Creek from its headwaters to the mouth at the Boulder River has been identified as water quality impaired on the MDEQ 303d list (MDEQ 2005). However, there is some discrepancy between the MDEQ assessment and current conditions within the segment. The 303d list identifies the creek as not supporting aquatic life or coldwater fisheries or as a drinking water supply. The probable causes listed are copper, lead, metals, and other habitat alterations. Probable sources are listed as agriculture (grazing-related sources), and resource extraction (abandoned mines). There is no agriculture occurring either within or upstream of the eligible segment. An abandoned mine (Iron Mine) is located upslope of the headwaters of Muskrat Creek near Elkhorn Peak. The data used for the 303d assessment includes the following note: Iron Mine sediment samples were not obtained from Muskrat Creek substrate, but were obtained in the headwaters uplands (MDEQ 2005). It appears that the metals contamination listed has not been observed within the creek sediments, but rather is found upslope of the headwaters. Muskrat Creek is scheduled for a TMDL to address water quality issues between 2008 and 2012.

Based on BLM field observations, the eligible segment does not have the water quality issues described above and is capable of supporting aquatic life and coldwater fisheries. Data has not been collected to determine if the segment would be a suitable drinking water supply. Current conditions in the segment include significant habitat for westslope cutthroat trout, as described in the eligibility section of this report. MFWP, BLM, and USFS are collaborating to conserve westslope cutthroat trout within this segment and upstream on the USFS land. Measurements of pH have been taken at several points within the eligible segment and the results (7.3 to 10) indicate that the area is not contaminated with heavy metals. In addition, BLM has begun conducting invertebrate surveys and has found healthy populations indicative of good water quality. Water quality impairment may be an issue downstream of the eligible segment where the creek enters agricultural areas.

Invasive species are present within the corridor, as they are virtually everywhere. Some small patches of yellow toadflax (*Linaria vulgaris*) were observed along the trail. In addition, patches of trees were observed to be infected with mountain pine beetle (*Dendroctonus ponderosae*).

2. The status of landownership, minerals, use in the area, including the amount of private land involved and associated or incompatible uses:

All land within 0.25-mile of the eligible segment is Federally-managed. BLM manages lands on both sides of the creek for the entire length (Figure 8). Lands both upstream and downstream of the eligible segment are managed by the USFS, Deerlodge National Forest.

This segment has very low oil and gas potential. There are some known placer occurrences along the creek and there is some limited potential for the discovery of lode gold deposits. There are no current mineral resource uses along this segment.

3. Reasonably foreseeable potential uses of the land and related waters that would be enhanced, foreclosed, or curtailed if the area were included in the NWSRS and values that would be foreclosed or diminished if the area is not protected as part of the NWSRS:

The area would continue to be available for mountain biking, hiking, horseback riding, and dispersed camping. Foreclosing or curtailing these activities as a result of designation is not anticipated.

Current management does not permit mining within the study corridor. Historic mining (Iron Mine) occurred up slope of the headwaters on USFS land.

4. Federal or State agency that will administer the river should it be added to the NWSRS.

The eligible segment would be administered by BLM should it be added to the NWSRS.

5. Federal, State, Tribal, local, public, or other interest in designating or not designating the river, including the extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state, local, or other agencies and individuals:

The USFS manages land upstream and downstream of the eligible segment. The USFS did not find either the segments on its land eligible for inclusion in the NWSRS.

6. Estimated cost to the United States of acquiring necessary lands, interests in lands, and administering the area should it be added to the NWSRS:

Acquisition of land or interests in lands would not be necessary.

7. A determination of the degree to which the State or its political subdivision(s) might participate in the preservation and administration of the river should it be proposed for inclusion in the NWSRS:

MFWP is actively involved in a westslope cutthroat trout restoration program with the BLM and USFS in this segment. It is expected that their involvement in the protection and enhancement of the fisheries outstandingly remarkable values would continue.

8. The Federal agency's ability or other mechanisms to protect and manage the identified river related values other than WSR designation:

The surrounding USFS land is managed as the Elkhorn Wildlife Management Unit. BLM has a Memorandum of Understanding (MOU) with USFS to manage the lands surrounding the eligible segment for the benefit of recreation and wildlife, including fisheries. Management in accordance with the MOU is compatible with the protection and enhancement of the fisheries outstandingly remarkable value. No timber harvest or mining is permitted within the study corridor or within the Elkhorns WSA. Although current management is compatible with the protection of the outstandingly remarkable values, the time frame of these management goals are limited to the expiration of the MOU and subject to RMP amendments. Designation into the NWSRS would more permanently protect these values.

9. An evaluation of the adequacy of local zoning and other land use controls in protecting the river's outstandingly remarkable values by preventing incompatible development:

Local zoning and other land use controls do not pertain to this segment because it is entirely located on Federal lands.

10. Support or opposition to designation:

This is the suitability study report. During the scoping period, no support or opposition to designation of this segment was submitted. The public review of the draft RMP would provide an opportunity for other agencies and the public to review the preliminary findings and voice opposition or support.

11. Historical or existing rights that could be adversely affected with designation:

There are no known historical or existing rights that would be adversely affected by designation.

12. The consistency of designation with other agency plans, programs, or policies in meeting regional objectives:

Designation would be consistent with the Butte BLM RMP and the MOU with the USFS regarding management of this segment. A non-motorized hiking trail exists along the creek and is currently managed by the USFS under a BLM right-of-way.

13. The contribution to a river system, watershed, or basin integrity:

Muskrat Creek flows into the Boulder River.

PRELIMINARY SUITABILITY DETERMINATION SUMMARY

Two of the four eligible segments were determined suitable for inclusion in the NWSRS. Below is a brief summary of each of the four segments.

Segment 1: Upper Big Hole River

This segment contains outstandingly remarkable recreational and fisheries values. The recreational values include readily accessible camping and fishing opportunities in a section rated as a Class I, Blue Ribbon Fisheries. The fisheries values include a population of BLM sensitive Montana arctic grayling. The segment supports high quality grayling habitat on the Big Hole River and lacks the high-density populations of rainbow and brown trout, which compete with grayling. The segment meets the tentative classification as a Recreational river due to the presence of a road parallel to the segment. There are several physical and management challenges associated with this segment. BLM control of water quality within the segment is somewhat limited. Upstream of the segment is a small state-owned parcel (approximately 0.25-mile) followed by extensive private land holdings. Without acquisition of private lands, the Federal government would have very little control over the potential water quality impacts related from private land uses such as grazing. Within the segment, the ford and grazing create potential water quality impacts. The BLM could more restrictively manage these land uses to further protect water quality. The largest management challenge could arise as a result of inclusion of this segment in the NWSRS. Designation in the NWSRS would bring national recognition to this relatively small (2.3-mile) section of the Big Hole River. Increased use of this segment would alter the recreational experiences that are currently identified as outstandingly remarkable. The dispersed camping opportunities would not be feasible with increased use given the small amount of BLM land between the road and the river and the important riparian areas. Consequently, it is likely BLM would have to institute more restrictive management measures regarding recreation in the area or develop campsites and provide facilities. These changes would alter the values currently associated with the segment. As a result, this segment has been determined **not suitable** for designation as a Recreational river within the NWSRS.

Segment 2: Missouri River (Hauser Dam to Upper Holter Lake)

This segment contains outstandingly remarkable recreational, wildlife, and scenic values. The segment, which is primarily accessible by boat, is rated as a Class I, Blue Ribbon Fisheries, attracting national and international anglers. The river corridor provides significant habitat for bald eagle, osprey, golden eagle, peregrine falcon and bighorn sheep. Bald and golden eagle, osprey, and peregrine falcon depend upon the fisheries for food and the riparian corridor for nesting and perching habitats. Big horn sheep primarily use the river corridor for water and forage. Although flows are controlled by Canyon Ferry and to a lesser degree Hauser Dam, the FERC license requires adequate flows for fisheries habitat. These required flows maintain the free-flowing nature of the segment and provide flows suitable for the protection of the recreational, wildlife, and scenic outstandingly remarkable values. The segment meets classification criteria as Scenic because there is limited access to the segment, no parallel roads and development along the segment is limited to the Beaver Creek parking area and a pit toilet maintained by the USFS. Some dispersed camping occurs along the segment, but there are no developed sites. Due to the Beaver Creek parking area and pit toilet, both visible from the river, this segment is not designated as Wild because it does not meet the criteria that shoreline development be primitive. Designation of this segment as Scenic would result in minimal changes to existing management but would result in legislatively protecting the riparian corridor and provide a common goal for BLM and USFS coordination of the segment. As of this report, the USFS has found this segment to be eligible for inclusion in the NWSRS but has not completed a suitability study of the segment (Helena National Forest 1989). Because the BLM manages one side of the river and the USFS manages the other, successful management of this segment depends on cooperative management between the BLM and USFS. This segment has been determined **preliminarily suitable for designation**

as a Scenic river within the NWSRS. Because successful management of this segment depends on coordination with the USFS, the final BLM suitability determination will be deferred until the USFS completes a suitability study of this segment.

Segment 3: Moose Creek (segment within Humbug Spires WSA)

This segment contains outstandingly remarkable recreational and scenic values. The recreational values are related to the hiking, fishing, and primitive camping opportunities including providing a scenic hiking trail that provides access to the Humbug Spires for rock climbing. The scenic values are related to the variety of color patterns and habitats within the river corridor, which change from meandering through meadows, to wooded, to cascading boulders, returning to meadow at the upstream end. In addition, at several locations along the creek, generous views of the spires are available. The entire segment is located within the Humbug Spires WSA with access limited to the trailhead located at the downstream end of the segment. A hiking trail parallels the creek for the lower third; the upper two-thirds are accessible only by bushwhacking, as no trail exists. The primary characteristic making this segment not worthy of designation is water quality. The segment is listed as water quality impaired by the MDEQ 303d list, and there is no restoration plan in place or planned for development. The causes of water quality impairment are related to private land uses upstream of the eligible segment. Federal agencies, including BLM, do not have authority to regulate these land uses. In order, to remedy the water quality issues, the BLM would need to acquire these lands or an interest in the lands (through easement) along the river corridor. Such acquisition would be fairly expensive, and likely against the wishes of the landowner. Protection of the recreational and scenic outstandingly remarkable values within the BLM authority is currently provided by the WSA designation. However, the protections afforded by WSA designation are dependent upon the continued WSA designation or legislative action to formally designate the area as Wilderness under the Wilderness Act. Removal of WSA designation could result in the introduction of commodity based land uses, which could impact the recreational and scenic values of this segment. As a result of the water quality issues, this segment has been determined **not suitable** for inclusion in the NWSRS.

Segment 4: Muskrat Creek

This segment contains outstandingly remarkable fisheries values related to its population of westslope cutthroat trout. Muskrat Creek, through the efforts of BLM, MFWP, and USFS, is considered to have a healthy genetically pure westslope cutthroat trout population. The high-quality riparian habitat provides critical winter elk habitat and a migration corridor for elk, moose and bear. The only potential detracting characteristic of this segment is related to water quality. A trail parallels the segment for its entire length. The only development along this segment consists of a small wooden footbridge located approximately 1.5 miles upstream from the trailhead. Remnants of another small footbridge were observed near the upstream end of the segment. The MDEQ has listed Muskrat Creek including the eligible segment as water quality impaired and is developing a TMDL to restore water quality. However, observations within this segment show no evidence of water quality impairment. Further investigation is necessary for confirmation, but it appears that the segment may need to be removed from the 303d list. Designation of this segment would result in minimal changes from current management but would ensure protection of the fisheries values through legislative designation. This segment has been determined **suitable for designation as a Scenic river** within the NWSRS. If further examination determines that the segment has good water quality, and is subsequently removed from the MDEQ 303d list, the segment would be **suitable for designation as a Wild river** within the NWSRS. This suitability study has examined only the portion of Muskrat Creek on BLM land as a stand alone segment. The USFS manages portions of Muskrat Creek both upstream and downstream of this segment which may also be suitable for designation. If the USFS completes an eligibility and suitability determination, the total length of the segment worthy for designation within the NWSRS may increase.

INTERIM MANAGEMENT

Interim protection for preliminarily suitable segments is described in Appendix C.

Missouri River

Current BLM management of this segment is sufficient to protect the free-flowing nature and outstandingly remarkable values within BLM's authority that make this segment suitable for designation as a Scenic river in the NWSRS. Successful long-term management of this segment needs to be closely coordinated with the USFS, which manages the opposite shoreline.

Muskrat Creek

Current BLM management of this segment is sufficient to protect the free-flowing nature and outstandingly remarkable fisheries values that make this segment suitable for designation within the NWSRS. Continued coordination with USFS and MFWP would be critical to maintain the genetic purity of westslope cutthroat trout in the segment. Although it appears that heavy metals from the abandoned Iron Mine are not reaching the creek, an assessment of potential impact should be conducted. It may be necessary to take additional protective measures to ensure that contamination does not occur.

Although the Upper Big Hole River and Missouri River segments were preliminarily found not suitable, if an alternative is chosen that includes these segments as being recommended suitable, protective management would apply.

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GLOSSARY

ELIGIBLE RIVER SEGMENT. A section of a river that qualifies for inclusion in the National Wild and Scenic River System through determination that it is free-flowing and with its adjacent land area possessing at least one river-related value considered to be outstandingly remarkable.

PLANNING AREA. The geographical area for which land use and resource management plans are developed and maintained.

RESOURCE MANAGEMENT PLAN (RMP). A land use plan that establishes land use allocations, multiple-use guidelines, and management objectives for a given planning area. The BLM has used the RMP planning system since about 1980.

SUITABLE RIVER. A river segment found, through administrative study by an appropriate agency, to meet the criteria for designation as a component of the National Wild and Scenic Rivers system, specified in Section 4(a) of the Wild and Scenic Rivers Act.

ELIGIBILITY CRITERIA

INTRODUCTION

For the purpose of classification, a river area may be divided into segments. For example, changes in river character, such as the presence of dams and reservoirs, significant changes in types or amounts of development, significant changes in physiographic character, tributaries, or features, and/or significant changes in land status, should be considered in identifying river segments for evaluation. Management strategies necessary to administer the entire river area should also be taken into account. As such, excessive segmentation should be avoided. Each segment, considered as a whole, needs to conform to either the Wild, Scenic, or Recreational classification. There are no specific requirements for segment length. Congress has designated a segment as short as four miles. A river segment is of sufficient length if a specific outstandingly remarkable value or values can be protected (a factor in the suitability determination, not eligibility determination), should the segment be designated. An entire stream could be one segment.

Each identified river segment in the RMP planning area must be evaluated to determine whether or not it is eligible for inclusion in the NWSRS. To be eligible, a river segment must be “free-flowing” and must possess at least one “outstandingly remarkable” value. Free-flowing means “existing or flowing in a natural condition without impoundment, diversion, straightening, rip-rapping, or other modification of the water.” Please note the following:

- A river below a dam or impoundment can still be eligible;
- A river need not be navigable by water craft in order to be eligible; and
- There are no specific requirements concerning the flow of an eligible river segment. Flows are sufficient if they sustain or complement the outstandingly remarkable values for which the segment would be designated. As such, intermittent and ephemeral streams can be eligible.

OUTSTANDINGLY REMARKABLE VALUES

The determination of whether a river area contains “outstandingly remarkable” values is a professional judgment and needs to be documented in the study report. In order to be considered as outstandingly remarkable, a river-related value must be a unique, rare, or exemplary feature that is significant at a comparative regional or national scale. While the spectrum of resources that may be considered is broad, all values should be directly river related. That is, they should have the following characteristics:

- Be located in the river or on its immediate shorelands (for the purposes of this study, the preliminary boundary is 0.25 mile on either side of the river);
- Contribute substantially to the functioning of the river ecosystem; or
- Owe their location or existence to the presence of the river.

The following are general guidelines for the outstandingly remarkable values for which river segments can be eligible. Only one such value is needed for eligibility.

SCENIC

The landscape elements of landform, vegetation, water, color, and related factors result in notable or exemplary visual features or attractions. When analyzing scenic values, additional factors, such as seasonal variations in vegetation, scale of cultural modifications, and the length of time negative intrusions are viewed, may be considered. Scenery and visual attractions may be highly diverse over most of the river or river segment.

RECREATIONAL

Recreational opportunities are or have the potential to be popular enough to attract visitors from throughout or beyond the region of comparison or are unique or rare within the region. Visitors are willing to travel long distances to use the river resources for recreational purposes. River-related opportunities could include, but are not limited to, sightseeing, wildlife observation, camping, photography, hiking, fishing and boating.

- Interpretive opportunities may be exceptional and may attract or have the potential to attract visitors from outside the region of comparison.
- The river may provide or have the potential to provide settings for national or regional usage or competitive events.

GEOLOGICAL

The river, or the area within the river corridor, contains one or more examples of a geologic feature, process, or phenomenon that are unique or rare within the region of comparison. The features may be in an unusually active stage of development, represent a textbook example, or represent a unique or rare combination of geologic features (erosional, volcanic, glacial, or other geologic structures).

FISH

Fish values may be judged on the relative merits of either fish populations or habitat or a combination of the following river-related conditions:

- *Populations*. The river is nationally or regionally one of the top producers of resident, indigenous, or anadromous fish species. Of particular significance may be the presence of wild or unique stocks or populations of state- or US-listed or candidate threatened and endangered species.
- *Habitat*. The river provides exceptionally high quality habitat for fish species indigenous to the region. Of particular significance is habitat for state- or US-listed or candidate threatened and endangered species.

WILDLIFE

Wildlife values may be judged on the relative merits of either wildlife populations or habitat, or a combination of the following conditions:

- *Populations*. The river or area within the river corridor contains nationally or regionally important populations of resident or indigenous wildlife species dependent on the river environment. Of particular significance may be species considered to be unique or populations of state- or US-listed or candidate threatened and endangered species.
- *Habitat*. The river or area within the river corridor provides exceptionally high quality habitat for wildlife of national or regional significance or may provide unique habitat or a critical link in habitat conditions for state- or US-listed or candidate threatened and endangered species. Contiguous habitat conditions are such that the biological needs of the species are met.

CULTURAL

The river or area within the river corridor contains a site or sites where there is evidence of occupation or use by Native Americans. Sites must be rare or must have unusual characteristics or exceptional human-interest values. Sites may have national or regional importance for interpreting prehistory; may be rare; may represent an area where culture or a cultural period was first identified and described; may have been used concurrently by two or more cultural groups; or may have been used by cultural groups for rare or sacred purposes.

HISTORIC

The river or area within the river corridor contains a site or sites or feature or features associated with a significant event, an important person, or a cultural activity of the past that was rare or unusual in the region. A historic site or feature in most cases is 50 years old or older. Sites or features listed in or eligible for inclusion in the National Register of Historic Places may be of particular significance.

OTHER SIMILAR VALUES

While no specific evaluation guidelines have been developed for the other similar values category, additional values deemed relevant to the eligibility of the river segment should be considered in a manner consistent with the foregoing guidance, including, but not limited to, hydrologic, ecologic/biologic diversity, paleontologic, botanic, and scientific study opportunities.

CLASSIFICATION CRITERIA FOR WILD, SCENIC, AND RECREATIONAL RIVER AREAS

Table B-1
Classification Criteria for Wild, Scenic, and Recreational River Areas

Attribute	Wild	Scenic	Recreational
Water Resources Development (impoundments, diversions, etc.)	Free of impoundment	Free of impoundment	Some existing impoundment or diversion. The existence of low dams, diversions, riprap, or other modifications of the waterway is acceptable, provided the waterway remains generally natural and riverine in appearance.
Shoreline Development	Essentially primitive. Little or no evidence of human activity. The presence of a few inconspicuous structures, particularly those of historic or cultural value, is acceptable. A limited amount of domestic livestock grazing or hay production is acceptable. Little or no evidence of past timber harvest. No ongoing timber harvest.	Largely primitive and undeveloped. No substantial evidence of human activity. The presence of small communities or dispersed dwellings or farm structures is acceptable. The presence of grazing, hay production, or row crops is acceptable. Evidence of past or ongoing timber harvest is acceptable, provided the forest appears natural from the riverbank.	Some development. Substantial evidence of human activity. The presence of extensive residential development and a few commercial structures is acceptable. Lands may have been developed for the full range of agricultural and forestry uses. May show evidence of past and ongoing timber harvest.

Table B-1
Classification Criteria for Wild, Scenic, and Recreational River Areas *(continued)*

Attribute	Wild	Scenic	Recreational
Accessibility	Generally inaccessible except by trail. No roads, railroads, or other provision for vehicular travel within the river area. A few existing roads leading to the boundary of the river area is acceptable.	Accessible in places by road. Roads may occasionally reach or bridge the river. The existence of short stretches of conspicuous or longer stretches of inconspicuous roads or railroads is acceptable.	Readily accessible by road or railroad. The existence of parallel roads or railroads on one or both banks, as well as bridge crossings and other river access points, including fords, is acceptable.
Water Quality	Meets or exceeds Federal criteria or Federally approved state standards for aesthetics, for propagation of fish and wildlife normally adapted to the habitat of the river, and for primary contact recreation (swimming), except where exceeded by natural conditions.	No criteria prescribed by the Wild and Scenic Rivers Act. The Federal Water Pollution Control Act Amendments of 1972 have made it a national goal that all waters of the United States be made fishable and swimmable. Therefore, rivers will not be precluded from scenic or recreational classification because of poor water quality at the time of their study, provided a water quality improvement plan exists or is being developed in compliance with applicable Federal and state laws.	

Source: Federal Register. National Wild and Scenic Rivers System; Final Revised Guidelines for Eligibility, Classification, and Management of River Areas. Section 1(3), Vol. 47, No. 173, page 39461. September 7, 1982.

INTERIM PROTECTION FOR CANDIDATE WILD AND SCENIC RIVERS

Table C-1
Interim Protection for Candidate Wild and Scenic Rivers

	Wild and Scenic Rivers Act, Section 5(d)(1)[1]	
Issue/Action	**Eligible**[2]	**Suitable**
Study Boundary	Minimum of 0.25-mile from ordinary high-water mark. Boundary may include adjacent areas needed to protect identified values.	Minimum of 0.25-mile from ordinary high-water mark. Boundary may include adjacent areas needed to protect identified values.
Preliminary Classification	Section 2(b): 3 classes: Wild, scenic, recreational, defined by statute. Criteria for classification described in Interagency Guidelines. Manage at preliminary classification.	Section 2(b): 3 classes: Wild, scenic, recreational, defined by statute. Criteria for classification described in Interagency Guidelines. Manage at preliminary classification.
Study Report Review Procedures		Notice of study report/draft EA[3] published in Federal Register. Comments/response from Federal, state, and local agencies and the public included in the study report/final EA[4] transmitted to the President and Congress.

Table C-1
Interim Protection for Candidate Wild and Scenic Rivers *(continued)*

	Wild and Scenic Rivers Act, Section 5(d)(1)[1]	
Issue/Action	**Eligible[2]**	**Suitable**
Private Land	Affect private land uses through voluntary partnership with state/local governments and landowners.	Affect private land uses through voluntary partnership with state/local governments and landowners.
*Administration	No regulatory authority.	No regulatory authority.
*Acquisition	No ability to acquire interest in land under the Act's authority prior to designation.	No ability to acquire interest in land under the act's authority prior to designation.
		Typically an evaluation of the adequacy of local zoning and land use controls is a component of suitability determination[5].
Water Resources Project	River's free-flowing condition protected to the extent of other agency authorities; not protected under the act.	River's free-flowing condition protected to the extent of other agency authorities; not protected under the act.
Land Disposition	Agency discretion to retain lands within river corridor in Federal ownership.	Agency discretion to retain lands within river corridor in Federal ownership.
Mining and Mineral Leasing	Protect free flow, water quality, and outstandingly remarkable values through other agency authorities.	Protect free flow, water quality, and outstandingly remarkable values through other agency authorities.
Actions of Other Agencies	Affect actions of other agencies through voluntary partnership.	Affect actions of other agencies through voluntary partnership.
Protect Outstandingly Remarkable Values	No regulatory authority conferred by the act; agency protects through other authorities. Section 11(b) 1: Limited financial or other assistance to encourage participation in the acquisition, protection, and management of river resources[6].	No regulatory authority conferred by the act; agency protects through other authorities. Section 11(b) 1: Limited financial or other assistance to encourage participation in the acquisition, protection, and management of river resources[6].

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[1] Agency-identified study rivers as directed by Section 5(d)(1) of the act.

[2] A number of sources are available for identifying rivers under Section 5(d)(1). Under a Presidential Directive issued in 1979, each Federal agency, as part of its normal planning and environmental review processes, is required to avoid or mitigate adverse effects on rivers in the National Rivers Inventory.

[3] Draft environmental assessment

[4] Final environmental assessment

[5] For an agency-identified study river that includes private lands, there is often the need to evaluate existing state and local land use controls and, if necessary, to assess the willingness of state and local government to protect river values.

[6] Section 11(b)1 authorizes the Secretary of the Interior and Secretary of Agriculture or the head of any other Federal agency to provide for "limited financial or other assistance to encourage participation in the acquisition, protection, and management of river resources." This authority "applies within or outside a Federally administered area and applies to rivers which are components of the National Wild and Scenic Rivers System and to other rivers." The recipients of Federal assistance include states or their political subdivisions, landowners, private organizations, or individuals. Some examples of assistance under this section include, but are not limited to, riparian restoration, riparian fencing to protect water quality and riparian vegetation, of vegetative screening to enhance scenery/recreation experience.

RIVER SEGMENTS FROM INITIAL IDENTIFICATION EFFORTS

Table D-1 lists the Planning Area river and stream segments considered during initial identification efforts for the Wild and Scenic Rivers study process.

Table D-1
River Segments from Initial Identification Efforts

River Segment	Total Segment Length (miles)	Length on BLM-administered Lands (miles)	Free Flowing	Outstandingly Remarkable Values								Determination	
				Scenic	Recreation	Geological	Fish	Wildlife	Historic	Cultural	Other	Not Eligible	Eligible
Big Hole River	**15.20**	**6.96**										X	
segment 1		0.39										X	
segment 2		0.34										X	
segment 3		0.79										X	
segment 4		0.16										X	
segment 5		0.95										X	
segment 6		0.40										X	
segment 7		0.28										X	
segment 8		2.30	Yes		X		X						X
segment 9		0.73										X	
segment 10		0.26										X	
segment 11		0.15										X	
segment 12		0.21										X	
Big Pipestone Creek	**5.57**	**3.26**										X	
Blackfoot River	**2.22**	**1.90**										X	
segment 1		1.62										X	
segment 2		0.28										X	
Boulder River	**8.74**	**3.76**										X	
segment 1		0.03										X	
segment 2		0.06										X	
segment 3		0.17										X	
segment 4		0.27										X	
segment 5		1.48										X	

Table D-1
River Segments from Initial Identification Efforts *(continued)*

River Segment	Total Segment Length (miles)	Length on BLM-administered Lands (miles)	Free Flowing	Outstandingly Remarkable Values								Determination	
				Scenic	Recreation	Geological	Fish	Wildlife	Historic	Cultural	Other	Not Eligible	Eligible
segment 6		0.13										X	
segment 7		0.91										X	
segment 8		0.71										X	
Cabin Creek	**2.51**	**2.51**										X	
Camp Creek	**10.74**	**5.34**										X	
segment 1		1.58										X	
segment 2		3.76										X	
Cataract Creek	**1.88**	**0.37**										X	
segment 1		0.06										X	
segment 2		0.25										X	
segment 3		0.06										X	
Charcoal Creek	**1.77**	**1.31**										X	
segment 1		1.13										X	
segment 2		0.18										X	
Chicken Gulch	**2.09**	**2.09**										X	
Clark Gulch	**2.20**	**1.07**										X	
Cline Gulch	**1.38**	**1.34**										X	
Confederate Gulch	**5.43**	**3.28**										X	
segment 1		0.85										X	
segment 2		0.36										X	
segment 3		0.16										X	
segment 4		1.06										X	
segment 5		0.11										X	

Table D-1
River Segments from Initial Identification Efforts *(continued)*

River Segment	Total Segment Length (miles)	Length on BLM-administered Lands (miles)	Free Flowing	Outstandingly Remarkable Values								Determination	
				Scenic	Recreation	Geological	Fish	Wildlife	Historic	Cultural	Other	Not Eligible	Eligible
segment 6		0.63										X	
segment 7		0.11										X	
Connor Gulch	**1.11**	**1.11**										X	
Crow Creek	**1.04**	**1.04**										X	
DemiJohn Gulch	**1.94**	**1.94**										X	
Dry Creek	**6.16**	**7.50**										X	
segment 1		2.46										X	
segment 2	0.99	0.99										X	
segment 3	1.10	1.10										X	
segment 4		1.81										X	
segment 5		1.14										X	
Falls Gulch	**1.54**	**1.54**										X	
Fish Creek	**1.40**	**0.91**										X	
segment 1		0.61										X	
segment 2		0.30										X	
Fitz Creek	**1.73**	**0.91**										X	
Gold Run Creek	**1.02**	**1.02**										X	
Granite Creek	**1.14**	**1.14**										X	
Greenhorn Creek	**2.15**	**0.59**										X	
segment 1		0.27										X	
segment 2		0.32										X	
Hay Canyon	**1.17**	**1.17**										X	

Table D-1
River Segments from Initial Identification Efforts *(continued)*

River Segment	Total Segment Length (miles)	Length on BLM-administered Lands (miles)	Free Flowing	Outstandingly Remarkable Values								Determination	
				Scenic	Recreation	Geological	Fish	Wildlife	Historic	Cultural	Other	Not Eligible	Eligible
High Ore Creek	**5.22**	**2.19**										X	
segment 1		0.15										X	
segment 2		1.01										X	
segment 3		0.15										X	
segment 4		0.07										X	
segment 5		0.07										X	
segment 6		0.56										X	
segment 7		0.19										X	
Homestake Creek	**2.21**	**2.21**										X	
Horse Gulch	**2.43**	**2.43**										X	
Indian Creek	**9.30**	**6.73**										X	
segment 1		1.10										X	
segment 2		0.85										X	
segment 3		3.67										X	
segment 4		1.10										X	
segment 5*		9.10							X			X	
Jackson Creek	**2.98**	**0.50**										X	
segment 1		0.39										X	
segment 2		0.11										X	
Jimmie New Creek	**1.87**	**1.87**										X	
Johnny Gulch	**8.14**	**5.18**										X	
segment 1		0.29										X	
segment 2		0.31										X	

Table D-1
River Segments from Initial Identification Efforts *(continued)*

River Segment	Total Segment Length (miles)	Length on BLM-administered Lands (miles)	Free Flowing	Outstandingly Remarkable Values								Determination	
				Scenic	Recreation	Geological	Fish	Wildlife	Historic	Cultural	Other	Not Eligible	Eligible
segment 3		0.68										X	
segment 4		0.58										X	
segment 5		0.24										X	
segment 6		1.47										X	
segment 7		1.01										X	
segment 8		0.34										X	
segment 9		0.27										X	
Keating Gulch	**6.39**	**1.24**										X	
segment 1		0.09										X	
segment 2		0.28										X	
segment 3		0.08										X	
segment 4		0.11										X	
segment 5		0.41										X	
segment 6	0.27	0.27										X	
Little Prickly Pear Creek	**5.49**	**3.52**										X	
segment 1		3.05										X	
segment 2		0.47										X	
Little Whitetail Creek	**4.17**	**2.12**										X	
segment 1		1.41										X	
segment 2		0.71										X	

Table D-1
River Segments from Initial Identification Efforts *(continued)*

River Segment	Total Segment Length (miles)	Length on BLM-administered Lands (miles)	Free Flowing	Outstandingly Remarkable Values								Determination	
				Scenic	**Recreation**	**Geological**	**Fish**	**Wildlife**	**Historic**	**Cultural**	**Other**	**Not Eligible**	**Eligible**
Lost Horse Creek	**5.40**	**0.85**										X	
segment 1		0.02										X	
segment 2		0.15										X	
segment 3		0.27										X	
segment 4		0.24										X	
segment 5		0.17										X	
Lump Gulch	**7.91**	**2.56**										X	
segment 1		1.27										X	
segment 2		1.03										X	
segment 3		0.26										X	
Missouri River	**43.79**	**29.21**										X	
segment 1		3.05	Y		X								X
segment 2		5.47										X	
segment 3		2.77										X	
segment 4		14.21										X	
segment 5		1.66										X	
segment 6		0.13										X	
segment 7		0.14										X	
segment 8		0.27										X	
segment 9		0.48										X	
segment 10		0.76										X	
segment 11		0.27										X	

Table D-1
River Segments from Initial Identification Efforts *(continued)*

River Segment	Total Segment Length (miles)	Length on BLM-administered Lands (miles)	Free Flowing	Outstandingly Remarkable Values								Determination	
				Scenic	Recreation	Geological	Fish	Wildlife	Historic	Cultural	Other	Not Eligible	Eligible
Moose Creek	**11.88**	**7.46**										X	
segment 1		4.00	Y	X	X			X					X
segment 2		3.46										X	
Muskrat Creek	**2.60**	**2.60**	Y				X						X
Nelson Gulch	**1.64**	**1.64**										X	
Patton Gulch	**1.79**	**1.59**										X	
segment 1		1.53										X	
segment 2		0.06										X	
Piegan Creek	**4.18**	**1.37**										X	
segment 1		0.14										X	
segment 2		0.27										X	
segment 3		0.06										X	
segment 4		0.11										X	
segment 5		0.17										X	
segment 6		0.46										X	
segment 7		0.06										X	
segment 8		0.10										X	
Prickly Pear Creek	**1.92**	**1.16**										X	
segment 1		0.89										X	
segment 2		0.27										X	
Saint Louis Gulch	**1.59**	**0.49**										X	
segment 1		0.04										X	
segment 2		0.45										X	

Table D-1
River Segments from Initial Identification Efforts *(continued)*

River Segment	Total Segment Length (miles)	Length on BLM-administered Lands (miles)	Free Flowing	Outstandingly Remarkable Values								Determination	
				Scenic	Recreation	Geological	Fish	Wildlife	Historic	Cultural	Other	Not Eligible	Eligible
Sevenmile Creek	**1.35**	**1.28**										X	
Sheep Creek	**3.74**	**3.09**										X	
Silver Creek	**5.25**	**2.81**										X	
segment 1		0.12										X	
segment 2		0.28										X	
segment 3		0.37										X	
segment 4		0.38										X	
segment 5		0.25										X	
segment 6		0.88										X	
segment 7	0.53	0.53										X	
Skelly Gulch	**0.91**	**0.79**										X	
Soap Creek	**8.28**	**5.02**										X	
segment 1		0.93										X	
segment 2		0.71										X	
segment 3		0.91										X	
segment 4		0.31										X	
segment 5		2.15										X	
Teddy Creek	**1.78**	**1.56**										X	
Towhead Gulch	**2.95**	**1.64**										X	
segment 1		0.71										X	
segment 2		0.93										X	
Virginia Creek	**3.44**	**1.79**										X	

Note:
* = Indian Creek Segment 5 was initially found to be eligible. Further evaluation during the suitability phase determined the segment not to be free flowing. The extensive historic and current mining activities have resulted in a channel which does not meet the "natural condition" requirements of free flowing. Numerous placer piles along the segment have resulted in severe modification of the natural channel.

Table D-1
River Segments from Initial Identification Efforts *(continued)*

River Segment	Total Segment Length (miles)	Length on BLM-administered Lands (miles)	Free Flowing	Outstandingly Remarkable Values								Determination	
				Scenic	Recreation	Geological	Fish	Wildlife	Historic	Cultural	Other	Not Eligible	Eligible
Whipcracker Gulch	**3.81**	**2.28**										X	
segment 1		0.18										X	
segment 2		0.56										X	
segment 3		1.55										X	
Wood Gulch	**1.26**	**1.26**										X	
Yellowstone River	**5.04**	**4.96**										X	
segment 1		0.24										X	
segment 2		0.19										X	
segment 3		0.31										X	
segment 4		1.28										X	
segment 5		0.65										X	
segment 6		0.24										X	
segment 7		0.89										X	
segment 8		0.27										X	
segment 9		0.90										X	

APPENDIX K– CULTURAL RESOURCES

USE CATEGORIES FOR MANAGEMENT OF CULTURAL RESOURCES SITES

BLM MANUAL SERIES 8110.4 - .43

.4 Categorizing as to Uses

Categorizing cultural resources according to their potential uses is the culmination of the identification process and the bridge to protection and utilization decisions. Use categories establish what needs to be protected, and when or how use should be authorized. All cultural resources have uses, but not all should be used in the same way. Cultural resources can be allocated to the various recognized use categories even before they are individually identified. The clear advantage in doing this is that it allows Field Office managers to know in advance how to respond to conflicts that arise between specific cultural resources and other land uses. Relative to the national Programmatic Agreement, categorizing resources to uses provides a mechanism for the Field Office manager and the SHPO to confer and concur on how to handle most routine cases of conflict in advance, enabling the Field Office manager to put decisions into effect in the most appropriate, and most timely manner.

.41 Allocations to Use Categories

Field Office managers shall allocate to appropriate use categories all cultural properties known and projected to occur in a plan area. Allocations are made in regional plans, local interdisciplinary plans, or project plans, as relevant and timely, and may be applied either to individual properties or to classes of similar properties. Appropriately qualified staff professionals recommend suitable uses for each cultural property or class of properties, considering the properties' characteristics, condition, setting, location, and accessibility, and especially their perceived values and potential uses. A cultural property may be allocated to more than one use category. When allocations have not been made in other planning decisions they should be made during the compliance process for land use authorizations, to allow Field Office managers to analyze needs and develop appropriate mitigation and treatment options. Allocations should be reevaluated and revised, as needed, when circumstances change or new data become available. Allocations should be consistent with historic context documents and State Historic Preservation Plans.

.42 Use Categories

A. Scientific Use. This category applies to any cultural property determined to be available for consideration as the subject of scientific or historical study at the present time, using currently available research techniques. Study includes methods that would result in the property's physical alteration or destruction. This category applies almost entirely to prehistoric and historic archaeological properties, where the method of use is generally archaeological excavation, controlled surface collection, and/or controlled recordation (data recovery). Recommendations to allocate individual properties to this use must be based on documentation of the kinds of data the property is thought to contain and the data's importance for pursuing specified research topics. Properties in this category need not be conserved in the face of a research or data recovery (mitigation) proposal that would make adequate and appropriate use of the property's research importance.

B. Conservation for Future Use. This category is reserved for any unusual cultural property which, because of scarcity, a research potential that surpasses the current state of the art, singular historic importance, cultural importance, architectural interest, or comparable reasons, is not currently available for consideration as the subject of scientific or historical study that would result in its physical alteration. A cultural property included in this category is deemed worthy of segregation from all other land or resource uses, including cultural resource uses that would threaten the maintenance of its present condition or setting, as pertinent, and will remain in this use category until specified provisions are met in the future.

C. Traditional Use. This category is to be applied to any cultural resource known to be perceived by a specified social and/or cultural group as important in maintaining the cultural identity, heritage, or well-being of the group. Cultural properties assigned to this category are to be managed in ways that recognize the importance ascribed to them and seek to accommodate their continuing traditional use.

D. Public use. This category may be applied to any cultural property found to be appropriate for use as an interpretive exhibit in place, or for related educational and recreational uses by members of the general public. The category may also be applied to buildings suitable for continued use or adaptive use, for example as staff housing or administrative facilities at a visitor contact or interpretive site, or as shelter along a cross-country ski trail.

E. Experimental Use. This category may be applied to a cultural property judged well-suited for controlled experimental study, to be conducted by BLM or others concerned with the techniques of managing cultural properties, which would result in the property's alteration, possibly including loss of integrity and destruction of physical elements. Committing cultural properties or the data they contain to loss must be justified in terms of specific information that would be gained and how it would aid in the management of other cultural properties. Experimental study should aim toward understanding the kinds and rates of natural or human-caused deterioration, testing the effectiveness of protection measures, or developing new research or interpretation methods and similar kinds of practical management information. It should not be applied to cultural properties with strong research potential, traditional cultural importance, or good public use potential, if it would significantly diminish those uses.

F. Discharged from Management. This category is assigned to cultural properties that have no remaining identifiable use. Most often these are prehistoric and historic archaeological properties, such as small surface scatters of artifacts or debris, whose limited research potential is effectively exhausted as soon as they have been documented. Also, more complex archaeological properties that have had their salient information collected and preserved through mitigation or research may be discharged from management, as should cultural properties destroyed by any natural event or human activity. Properties discharged from management remain in the inventory, but they are removed from further management attention and do not constrain other land uses. Particular classes of unrecorded cultural properties may be named and described in advance as dischargeable upon documentation, but specific cultural properties must be inspected in the field and recorded before they may be discharged from management.

.43 Relationship between Evaluation and Allocation

Cultural properties are evaluated with reference to National Register criteria for the purpose of assessing their historical values and their public significance. Such evaluations should be carefully considered when cultural properties are allocated to use categories and decisions are made regarding the appropriateness of National Register nomination and/or long-term preservation. Although preservation and nomination priorities must be weighed on a case-by-case basis, the following table can serve as a general guide to illustrate the relationship between National Register evaluation and allocation to use categories.

TABLE 8110-1.

Relationship Among Use Categories, National Register Eligibility, and Preservation/National Register Nomination

Cultural Resource Use Category	National Register Eligibility	Preservation/National Register Nomination
Scientific Use	Usually eligible	Long-term preservation not critical; medium National Register nomination priority.
Conservation for Future Use	Always eligible	Long-term preservation is required; highest nomination priority.
Traditional Use	May be eligible	Long-term preservation is desirable; nomination priority is determined in consultation with the appropriate cultural group(s).
Public Use	Usually eligible	Long-term preservation is desirable; high nomination priority.
Experimental Use	May be eligible	Long-term preservation not anticipated; low nomination priority.
Discharged from Management	Not eligible	Long-term preservation and management are not considerations; nomination is inappropriate.

INDIAN AFFAIRS: LAWS AND TREATIES
VOL. II, TREATIES

TREATY WITH THE BLACKFEET, 1855.

COMPILED AND EDITED BY CHARLES J. KAPPLER. WASHINGTON: GOVERNMENT PRINTING OFFICE, 1904.

Oct. 17, 1855. | 11 Stat., 657. | Ratified Apr. 15, 1856. | Proclaimed Apr. 25, 1856.

Articles of agreement and convention made and concluded at the council-ground on the Upper Missouri, near the mouth of the Judith River, in the Territory of Nebraska, this seventeenth day of October, in the year one thousand eight hundred and fifty-five, by and between A. Cumming and Isaac I. Stevens, commissioners duly appointed and authorized, on the part of the United States, and the undersigned chiefs, headmen, and delegates of the following nations and tribes of Indians, who occupy, for the purposes of hunting, the territory on the Upper Missouri and Yellowstone Rivers, and who have permanent homes as follows: East of the Rocky Mountains, the Blackfoot Nation, consisting of the Piegan, Blood, Blackfoot, and Gros Ventres tribes of Indians. West of the Rocky Mountains, the Flathead Nation, consisting of the Flathead, Upper Pend d'Oreille, and Kootenay tribes of Indians, and the Nez Percé tribe of Indians, the said chiefs, headmen and delegates, in behalf of and acting for said nations and tribes, and being duly authorized thereto by them.

ARTICLE 1.

Peace, friendship, and amity shall hereafter exist between the United States and the aforesaid nations and tribes of Indians, parties to this treaty, and the same shall be perpetual.

ARTICLE 2.

The aforesaid nations and tribes of Indians, parties to this treaty, do hereby jointly and severally covenant that peaceful relations shall likewise be maintained among themselves in future; and that they will abstain from all hostilities whatsoever against each other, and cultivate mutual good-will and friendship. And the nations and tribes aforesaid to furthermore jointly and severally covenant, that peaceful relations shall be maintained with and that they will abstain from all hostilities whatsoever, excepting in self-defense, against the following-named nations and tribes of Indians, to wit: the Crows, Assineboins, Crees, Snakes, Blackfeet, Sans Arcs, and Aunce-pa-pas bands of Sioux, and all other neighboring nations and tribes of Indians.

ARTICLE 3.

The Blackfoot Nation consent and agree that all that portion of the country recognized and defined by the treaty of Laramie as Blackfoot territory, lying within lines drawn from the Hell Gate or Medicine Rock Passes in the main range of the Rocky Mountains, in an easterly direction to the nearest source of the Muscle Shell River, thence to the mouth of Twenty-five Yard Creek, thence up the Yellowstone River to its northern source, and thence along the main range of the Rocky Mountains, in a northerly direction, to the point of beginning, shall be a common hunting-ground for ninety-nine years, where all the nations, tribes and bands of Indians, parties to this treaty, may enjoy equal and uninterrupted privileges of hunting, fishing and gathering fruit, grazing animals, curing meat and dressing robes. They further agree that they will not establish villages, or in any other way exercise exclusive rights within ten miles of the northern line of the common hunting-ground, and that the parties to this treaty may hunt on said northern boundary line and within ten miles thereof.

Provided, That the western Indians, parties to this treaty, may hunt on the trail leading down the Muscle Shell to the Yellowstone; the Muscle Shell River being the boundary separating the Blackfoot from the Crow territory.

And provided, That no nation, band, or tribe of Indians, parties to this treaty, nor any other Indians, shall be permitted to establish permanent settlements, or in any other way exercise, during the period above mentioned, exclusive rights or privileges within the limits of the above-described hunting-ground. And provided further, That the rights of the western Indians to a whole or a part of the common hunting-ground, derived from occupancy and possession, shall not be affected by this article, except so far as said rights may be determined by the treaty of Laramie.

ARTICLE 4.

The parties to this treaty agree and consent, that the tract of country lying within lines drawn from the Hell Gate or Medicine Rock Passes, in an easterly direction, to the nearest source of the Muscle Shell River, thence down said river to its mouth, thence down the channel of the Missouri River to the mouth of Milk River, thence due north to the forty-ninth parallel, thence due west on said parallel to the main range of the Rocky Mountains, and thence southerly along said range to the place of beginning, shall be the territory of the Blackfoot Nation, over which said nation shall exercise exclusive control, excepting as may be otherwise provided in this treaty. Subject, however, to the provisions of the third article of this treaty, giving the right to hunt, and prohibiting the establishment of permanent villages and the exercise of any exclusive rights within ten miles of the northern line of the common hunting-ground, drawn from the nearest source of the Muscle Shell River to the Medicine Rock Passes, for the period of ninety-nine years. Provided also, That the Assiniboins shall have the right of hunting, in common with the Blackfeet, in the country lying between the aforesaid eastern boundary line, running from the mouth of Milk River to the forty-ninth parallel, and a line drawn from the left bank of the Missouri River, opposite the Round Butte north, to the forty-ninth parallel.

ARTICLE 5.

The parties to this treaty, residing west of the main range of the Rocky Mountains, agree and consent that they will not enter the common hunting ground, nor any part of the Blackfoot territory, or return home, by any pass in the main range of the Rocky Mountains to the north of the Hell Gate or Medicine Rock Passes. And they further agree that they will not hunt or otherwise disturb the game, when visiting the Blackfoot territory for trade or social intercourse.

ARTICLE 6.

The aforesaid nations and tribes of Indians, parties to this treaty, agree and consent to remain within their own respective countries, except when going to or from, or whilst hunting upon, the “common hunting ground,” or when visiting each other for the purpose of trade or social intercourse.

ARTICLE 7.

The aforesaid nations and tribes of Indians agree that citizens of the United States may live in and pass unmolested through the countries respectively occupied and claimed by them. And the United States is hereby bound to protect said Indians against depredations and other unlawful acts which white men residing in or passing through their country may commit.

ARTICLE 8.

For the purpose of establishing travelling thoroughfares through their country, and the better to enable the President to execute the provisions of this treaty, the aforesaid nations and tribes do hereby consent and agree, that the United States may, within the countries respectively occupied and claimed by them, construct roads of every description; establish lines of telegraph and military posts; use materials of every description found in the Indian country; build houses for agencies, missions, schools, farms, shops, mills, stations, and for any other purpose for which they may be required, and permanently occupy as much land as may be necessary for the various purposes above enumerated, including the use of wood for fuel and land for grazing, and that the navigation of all lakes and streams shall be forever free to citizens of the United States.

ARTICLE 9.

In consideration of the foregoing agreements, stipulations, and cessions, and on condition of their faithful observance, the United States agree to expend, annually, for the Piegan, Blood, Blackfoot, and Gros Ventres tribes of Indians, constituting the Blackfoot Nation, in addition to the goods and provisions distributed at the time of signing the treaty, twenty thousand dollars, annually, for ten years, to be expended in such useful goods and provisions, and other articles, as the President, as his discretion, may from time to time determine; and the superintendent, or other proper officer, shall each year inform the President of the wishes of the Indians in relation thereto: Provided, however, That if, in the judgment of the President and Senate, this amount be deemed insufficient, it may be increased not to exceed the sum of thirty-five thousand dollars per year.

ARTICLE 10.

The United States further agree to expend annually, for the benefit of the aforesaid tribes of the Blackfoot Nation, a sum not exceeding fifteen thousand dollars annually, for ten years, in establishing and instructing them in agricultural and mechanical pursuits, and in educating their children, and in any other respect promoting their civilization and Christianization: Provided, however, That to accomplish the objects of this article, the President may, at his discretion, apply any or all the annuities provided for in this treaty: And provided, also, That the President may, at his discretion, determine in what proportions the said annuities shall be divided among the several tribes.

ARTICLE 11.

The aforesaid tribes acknowledge their dependence on the Government of the United States, and promise to be friendly with all citizens thereof, and to commit no depredations or other violence upon such citizens. And should any one or more violate this pledge, and the fact be proved to the satisfaction of the President, the property taken shall be returned, or, in default thereof, or if injured or destroyed, compensation may be made by the Government out of the annuities. The aforesaid tribes are hereby bound to deliver such offenders to the proper authorities for trial and punishment, and are held responsible, in their tribal capacity, to make reparation for depredations so committed.

Nor will they make war upon any other tribes, except in self-defense, but will submit all matter of difference, between themselves and other Indians, to the Government of the United States, through its agents, for adjustment, and will abide thereby. And if any of the said Indians, parties to this treaty, commit depredations on any other Indians within the jurisdiction of the United States, the same rule shall prevail as that prescribed in this article in case of depredations against citizens. And the said tribes agree not to shelter or conceal offenders against the laws of the United States, but to deliver them up to the authorities for trial.

ARTICLE 12.

It is agreed and understood, by and between the parties to this treaty, that if any nation or tribe of Indians aforesaid, shall violate any of the agreements, obligations, or stipulations, herein contained, the United States may withhold, for such length of time as the President and Congress may determine, any portion or all of the annuities agreed to be paid to said nation or tribe under the ninth and tenth articles of this treaty.

ARTICLE 13.

The nations and tribes of Indians, parties to this treaty, desire to exclude from their country the use of ardent spirits or other intoxicating liquor, and to prevent their people from drinking the same. Therefore it is provided, that any Indian belonging to said tribes who is guilty of bringing such liquor into the Indian country, or who drinks liquor, may have his or her proportion of the annuities withheld from him or her, for such time as the President may determine.

ARTICLE 14.

The aforesaid nations and tribes of Indians, west of the Rocky Mountains, parties to this treaty, do agree, in consideration of the provisions already made for them in existing treaties, to accept the guarantees of the peaceful occupation of their hunting-grounds, east of the Rocky Mountains, and of remuneration for depredations made by the other tribes, pledged to be secured to them in this treaty out of the annuities of said tribes, in full compensation for the concessions which they, in common with the said tribes, have made in this treaty.

The Indians east of the mountains, parties to this treaty, likewise recognize and accept the guarantees of this treaty, in full compensation for the injuries or depredations which have been, or may be committed by the aforesaid tribes, west of the Rocky Mountains.

ARTICLE 15.

The annuities of the aforesaid tribes shall not be taken to pay the debts of individuals.

ARTICLE 16.

This treaty shall be obligatory upon the aforesaid nations and tribes of Indians, parties hereto, from the date hereof, and upon the United States as soon as the same shall be ratified by the President and Senate.

In testimony whereof the said A. Cumming and Isaac I. Stevens, commissioners on the part of the United States, and the undersigned chiefs, headmen, and delegates of the aforesaid nations and tribes of Indians, parties to this treaty, have hereunto set their hands and seals at the place and on the day and year hereinbefore written.

A. Cumming. [L. S.]

Isaac I. Stevens [L. S.]

CuI. Stevens [LS.

Piegans:

Nee-ti-nee, or "the only chief," now called the Lame Bull, his x mark. [L. S.]

Mountain Chief, his x mark. [L. S.]

Low Horn, his x mark. [L. S.]

Little Gray Head, his x mark. [L. S.]

Little Dog, his x mark. [L. S.]

Big Snake, his x mark. [L. S.]

The Skunk, his x mark. [L. S.]

The Bad Head, his x mark. [L. S.]

Kitch-eepone-istah, his x mark. [L. S.]

Middle Sitter, his x mark. [L. S.]

Bloods:

Onis-tay-say-nah-que-im, his x mark. [L. S.]

The Father of All Children, his x mark. [L. S.]

The Bull's Back Fat, his x mark. [L. S.]

Heavy Shield, his x mark. [L. S.]

Nah-tose-onistah, his x mark. [L. S.]

The Calf Shirt, his x mark. [L. S.]

Gros Ventres:,

Bear's Shirt, his x mark. [L. S.]

Little Soldier, his x mark. [L. S.]

Star Robe, his x mark. [L. S.]

Sitting Squaw, his x mark. [L. S.]

Weasel Horse, his x mark. [L. S.]

The Rider, his x mark. [L. S.]

Eagle Chief, his x mark. [L. S.]

Heap of Bears, his x mark. [L. S.]

Blackfeet:

The Three Bulls, his x mark. [L. S.]

The Old Kootomais, his x mark. [L. S.]

Pow-ah-que, his x mark. [L. S.]

Chief Rabbit Runner, his x mark. [L. S.]

Nez Percés:

Spotted Eagle, his x mark. [L. S.]

Looking Glass, his x mark. [L. S.]

The Three Feathers, his x mark. [L. S.]

Eagle from the Light, his x mark. [L. S.]

The Lone Bird, his x mark. [L. S.]

Ip-shun-nee-wus, his x mark. [L. S.]

Jason, his x mark. [L. S.]

Wat-ti-wat-ti-we-hinck, his x mark. [L. S.]

White Bird, his x mark. [L. S.]

Stabbing Man, his x mark. [L. S.]

Jesse, his x mark. [L. S.]

Plenty Bears, his x mark. [L. S.]

Flathead Nation:

Victor, his x mark. [L. S.]

Alexander, his x mark. [L. S.]

Moses, his x mark. [L. S.]

Big Canoe, his x mark. [L. S.]

Ambrose, his x mark. [L. S.]

Kootle-cha, his x mark. [L. S.]

Michelle, his x mark. [L. S.]

Francis, his x mark. [L. S.]

Vincent, his x mark. [L. S.]

Andrew, his x mark. [L. S.]

Adolphe, his x mark. [L. S.]

Thunder, his x mark. [L. S.]

Piegans:

Running Rabbit, his x mark, [L. S.]

Chief Bear, his x mark. [L. S.]

The Little White Buffalo, his x mark. [L. S.]

The Big Straw, his x mark. [L. S.]

Flathead:

Bear Track, his x mark. [L. S.]

Little Michelle, his x mark. [L. S.]

Palchinah, his x mark. [L. S.]

Bloods:

The Feather, his x mark. [L. S.]

The White Eagle, his x mark. [L. S.]

Executed in presence of—

James Doty, secretary.

Alfred J. Vaughan, jr.

E. Alw. Hatch, agent for Blackfeet.

Thomas Adams, special agent Flathead Nation.

R. H. Lansdale, Indian agent Flathead Nation.

W. H. Tappan, sub-agent for the Nez Percés.

Blackfoot interpreters:

James Bird,

A. Culbertson,

Benj. Deroche,

Flat Head interpreters:

Benj. Kiser, his x mark,

Witness, James Doty,

Gustavus Sohon,

Nez Percé interpreters:

W. Craig,

Delaware Jim, his x mark,

Witness, James Doty,

A Cree Chief (Broken Arm,) his mark.

Witness, James Doty.

A. J. Hoeekeorsg,

James Croke,

E. S. Wilson,

A. C. Jackson,

Charles Shucette, his x mark.

Christ. P. Higgins,

A. H. Robie,

S. S. Ford, jr.

TREATY WITH THE CROWS, 1868

COMPILED AND EDITED BY CHARLES J. KAPPLER. WASHINGTON: GOVERNMENT PRINTING OFFICE, 1904.

May 7, 1868. | 15 Stats., 649. | Ratified, July 25, 1868. | Proclaimed, Aug. 12, 1868.

Articles of a treaty made and concluded at Fort Laramie, Dakota Territory, on the seventh day of May, in the year of our Lord one thousand eight hundred and sixty-eight, by and between the undersigned commissioners on the part of the United States, and the undersigned chiefs and head-men of and representing the Crow Indians, they being duly authorized to act in the premises.

ARTICLE 1.

From this day forward peace between the parties to this treaty shall forever continue. The Government of the United States desires peace, and its honor is hereby pledged to keep it. The Indians desire peace and they hereby pledge their honor to maintain it. If bad men among the whites or among other people, subject to the authority of the United States, shall commit any wrong upon the person or property of the Indians, the United States will, upon proof made to the agent and forwarded to the Commissioner of Indian Affairs at Washington City, proceed at once to cause the offender to be arrested and punished according to the laws of the United States, and also reimburse the injured person for the loss sustained.

If bad men among the Indians shall commit a wrong or depredation upon the person or property of any one, white, black, or Indian, subject to the authority of the United States and at peace therewith, the Indians herein named solemnly agree that they will, on proof made to their agent and notice by him, deliver up the wrong-doer to the United States, to be tried and punished according to its laws; and in case they refuse willfully so to do the person injured shall be reimbursed for his loss from the annuities or other moneys due or to become due to them under this or other treaties made with the United States. And the President, on advising with the Commissioner of Indian Affairs, shall prescribe such rules and regulations for ascertaining damages under the provisions of this article as in his judgment may be proper. But no such damages shall be adjusted and paid until thoroughly examined and passed upon by the Commissioner of Indian Affairs, and no one sustaining loss while violating, or because of his violating, the provisions of this treaty or the laws of the United States shall be reimbursed therefore.

ARTICLE 2.

The United States agrees that the following district of country, to wit: commencing where the 107th degree of longitude west of Greenwich crosses the south boundary of Montana Territory; thence north along said 107th meridian to the mid-channel of the Yellowstone River; thence up said mid-channel of the Yellowstone to the point where it crosses the said southern boundary of Montana, being the 45th degree of north latitude; and thence east along said parallel of latitude to the place of beginning, shall be, and the same is, set apart for the absolute and undisturbed use and occupation of the Indians herein named, and for such other friendly tribes or individual Indians as from to time they may be willing, with the consent of the United States, to admit amongst them; and the United States now solemnly agrees that no persons, except those herein designated and authorized so to do, and except such officers, agents, and employees of the Government as may be authorized to enter upon Indian reservations in discharge of duties enjoined by law, shall ever be permitted to pass over, settle upon, or reside in the territory described in this article for the use of said Indians, and henceforth they will, and do hereby, relinquish all title, claims, or rights in and to any portion of the territory of the United States, except such as is embraced within the limits aforesaid.

ARTICLE 3.

The United States agrees, at its own proper expense, to construct on the south side of the Yellowstone, near Otter Creek, a warehouse or store-room for the use of the agent in storing goods belonging to the Indians, to cost not exceeding twenty-five hundred dollars; an agency-building for the residence of the agent, to cost not exceeding three thousand dollars; a residence for the physician, to cost not more than three thousand dollars; and five other buildings, for a carpenter, farmer, blacksmith, miller, and engineer, each to cost not exceeding two thousand dollars; also a school-house or mission-building, so soon as a sufficient number of children can be induced by the agent to attend school, which shall not cost exceeding twenty-five hundred dollars.

The United States agrees further to cause to be erected on said reservation, near the other buildings herein authorized, a good steam circular saw-mill, with a grist-mill and shingle-machine attached, the same to cost not exceeding eight thousand dollars.

ARTICLE 4.

The Indians herein named agree, when the agency-house and other buildings shall be constructed on the reservation named, they will make said reservation their permanent home, and they will make no permanent settlement elsewhere, but they shall have the right to hunt on the unoccupied lands of the United States so long as game may be found thereon, and as long as peace subsists among the whites and Indians on the borders of the hunting districts.

ARTICLE 5.

The United States agrees that the agent for said Indians shall in the future make his home at the agency-building; that he shall reside among them, and keep an office open at all times for the purpose of prompt and diligent inquiry into such matters of complaint, by and against the Indians, as may be presented for investigation under the provisions of their treaty stipulations, as also for the faithful discharge of other duties enjoined on him by law. In all cases of depredation on person or property, he shall cause the evidence to be taken in writing and forwarded, together with his finding, to the Commissioner of Indian Affairs, whose decision shall be binding on the parties to this treaty.

ARTICLE 6.

If any individual belonging to said tribes of Indians, or legally incorporated with them, being the head of a family, shall desire to commence farming, he shall have the privilege to select, in the presence and with the assistance of the agent then in charge, a tract of land within said reservation, not exceeding three hundred and twenty acres in extent, which tract, when so selected, certified, and recorded in the "land book" as herein directed, shall cease to be held in common, but the same may be occupied and held in the exclusive possession of the person selecting it, and of his family, so long as he or they may continue to cultivate it.

Any person over eighteen years of age, not being the head of a family, may in like manner select and cause to be certified to him or her, for purposes of cultivation, a quantity of land not exceeding eighty acres in extent, and thereupon be entitled to the exclusive possession of the same as above directed.

For each tract of land so selected a certificate, containing a description thereof and the name of the person selecting it, with a certificate endorsed thereon that the same has been recorded, shall be delivered to the party entitled to it by the agent, after the same shall have been recorded by him in a book to be kept in his office, subject to inspection, which said book shall be known as the "Crow land book."

The President may at any time order a survey of the reservation, and, when so surveyed, Congress shall provide for protecting the rights of settlers in their improvements, and may fix the character of the title held by each. The United States may pass such laws on the subject of alienation and descent of property as between Indians, and on all subjects connected with the government of the Indians on said reservations and the internal police thereof, as may be thought proper.

ARTICLE 7.

In order to insure the civilization of the tribe entering into this treaty, the necessity of education is admitted, especially by such of them as are, or may be, settled on said agricultural reservation; and they therefore pledge themselves to compel their children, male and female, between the ages of six and sixteen years, to attend school; and it is hereby made the duty of the agent for said Indians to see that this stipulation is strictly complied with; and the United States agrees that for every thirty children, between said ages, who can be induced or compelled to attend school, a house shall be provided, and a teacher, competent to teach the elementary branches of an English education, shall be furnished, who will reside among said Indians, and faithfully discharge his or her duties as a teacher. The provisions of this article to continue for twenty years.

ARTICLE 8.

When the head of a family or lodge shall have selected lands and received his certificate as above directed, and the agent shall be satisfied that he intends in good faith to commence cultivating the soil for a living, he shall be entitled to receive seed and agricultural implements for the first year in value one hundred dollars, and for each succeeding year he shall continue to farm, for a period of three years more, he shall be entitled to receive seed and implements as aforesaid in value twenty-five dollars per annum.

And it is further stipulated that such persons as commence farming shall receive instructions from the farmer herein provided for, and whenever more than one hundred persons shall enter upon the cultivation of the soil, a second blacksmith shall be provided, with such iron, steel, and other material as may be required.

ARTICLE 9.

In lieu of all sums of money or other annuities provided to be paid to the Indians herein named, under any and all treaties heretofore made with them, the United States agrees to deliver at the agency house, on the reservation herein provided for, on the first day of September of each year for thirty years, the following articles, to wit:

For each male person, over fourteen years of age, a suit of good substantial woolen clothing, consisting of coat, hat, pantaloons, flannel shirt, and a pair of woolen socks.

For each female, over twelve years of age, a flannel skirt, or the goods necessary to make it, a pair of woolen hose, twelve yards of calico, and twelve yards of cotton domestics.

For the boys and girls under the ages named, such flannel and cotton goods as may be needed to make each a suit as aforesaid, together with a pair of woollen hose for each.

And in order that the Commissioner of Indian Affairs may be able to estimate properly for the articles herein named, it shall be the duty of the agent, each year, to forward to him a full and exact census of the Indians, on which the estimate from year to year can be based.

And, in addition to the clothing herein named, the sum of ten dollars shall be annually appropriated for each Indian roaming, and twenty dollars for each Indian engaged in agriculture, for a period of ten years, to be used by the Secretary of the Interior in the purchase of such articles as, from time to time, the condition and necessities of the Indians may indicate to be proper. And if, at any time within the ten years, it shall appear that the amount of money needed for clothing, under this article, can be appropriated to better uses for the tribe herein named, Congress may, by law, change the appropriation to other purposes; but in no event shall the amount of this appropriation be withdrawn or discontinued for the period named.

And the President shall annually detail an officer of the Army to be present and attest the delivery of all the goods herein named to the Indians, and he shall inspect and report on the quantity and quality of the goods and the manner of their delivery; and it is expressly stipulated that each Indian over the age of four years, who shall have removed to and settled permanently upon said reservation, and complied with the stipulations of this treaty, shall be entitled to receive from the United States, for the period of four years after he shall have settled upon said reservation, one pound of meat and one pound of flour per day, provided the Indians cannot furnish their own subsistence at an earlier date. And it is further stipulated that the United States will furnish and deliver to each lodge of Indians, or family of persons legally incorporated with them, who shall remove to the reservation herein described, and commence farming, one good American cow and one good, well-broken pair of American oxen, within sixty days after such lodge or family shall have so settled upon said reservation.

ARTICLE 10.

The United States hereby agrees to furnish annually to the Indians the physician, teachers, carpenter, miller, engineer, farmer, and blacksmiths as herein contemplated, and that such appropriations shall be made from time to time, on the estimates of the Secretary of the Interior, as will be sufficient to employ such persons.

ARTICLE 11.

No treaty for the cession of any portion of the reservation herein described, which may be held in common, shall be of any force or validity as against the said Indians unless executed and signed by, at least, a majority of all the adult male Indians occupying or interested in the same, and no cession by the tribe shall be understood or construed in such a manner as to deprive, without his consent, any individual member of the tribe of his right to any tract of land selected by him as provided in Article 6 of this treaty.

ARTICLE 12.

It is agreed that the sum of five hundred dollars annually, for three years from the date when they commence to cultivate a farm, shall be expended in presents to the ten persons of said tribe who, in the judgment of the agent, may grow the most valuable crops for the respective year.

W. T. Sherman,
Lieutenant-General.

Wm. S. Harney,
Brevet Major-General and Peace Commissioner.

Alfred H. Terry,
Brevet Major-General.

C. C. Augur,
Brevet Major-General.

John B. Sanborn.

S. F. Tappan.

Ashton S. H. White, Secretary.

Che-ra-pee-ish-ka-te, Pretty Bull, his x mark. [SEAL.]

Chat-sta-he, Wolf Bow, his x mark. [SEAL.]

Ah-be-che-se, Mountain Tail, his x mark. [SEAL.]

Kam-ne-but-sa, Black Foot, his x mark. [SEAL.]

De-sal-ze-cho-se, White Horse, his x mark. [SEAL.]

Chin-ka-she-arache, Poor Elk, his x mark. [SEAL.]

E-sa-woor, Shot in the Jaw, his x mark. [SEAL.]

E-sha-chose, White Forehead, his x mark. [SEAL.]

—Roo-ka, Pounded Meat, his x mark. [SEAL.]

De-ka-ke-up-se, Bird in the Neck, his x mark. [SEAL.]

Me-na-che, The Swan, his x mark. [SEAL.]

Attest:

George B. Wills, phonographer.

John D. Howland.

Alex. Gardner.

David Knox.

Chas. Freeman.

Jas. C. O'Connor.

TREATY WITH THE SHOSHONI—NORTHWESTERN BANDS, 1863.

COMPILED AND EDITED BY CHARLES J. KAPPLER. WASHINGTON: GOVERNMENT PRINTING OFFICE, 1904.

JULY 30, 1863. | 13 STATS., 663. | RATIFIED MAR. 7, 1864 | PROCLAIMED JAN. 17, 1865.

Articles of agreement made at Box Elder, in Utah Territory, this thirtieth day of July, A. D. one thousand eight hundred and sixty-three, by and between the United States of America, represented by Brigadier-General P. Edward Connor, commanding the military district of Utah, and James Duane Doty, commissioner, and the northwestern bands of the Shoshonee Indians, represented by their chiefs and warriors:

ARTICLE 1.

It is agreed that friendly and amicable relations shall be re-established between the bands of the Shoshonee Nation, parties hereto, and the United States, and it is declared that a firm and perpetual peace shall be henceforth maintained between the said bands and the United States.

ARTICLE 2.

The treaty concluded at Fort Bridger on the 2nd day of July, 1863; between the United States and the Shoshonee Nation, being read and fully interpreted and explained to the said chiefs and warriors, they do hereby give their full and free assent to all of the provisions of said treaty, and the same are hereby adopted as a part of this agreement, and the same shall be binding upon the parties hereto.

ARTICLE 3.

In consideration of the stipulations in the preceding articles, the United States agree to increase the annuity to the Shoshonee Nation five thousand dollars, to be paid in the manner provided in said treaty. And the said northwestern bands hereby acknowledge to have received of the United States, at the signing of these articles, provisions and goods to the amount of two thousand dollars, to relieve their immediate necessities, the said bands having been reduced by the war to a state of utter destitution.

ARTICLE 4.

The country claimed by Pokatello, for himself and his people, is bounded on the west by Raft River and on the east by the Porteneuf Mountains.

ARTICLE 5.

Nothing herein contained shall be construed or taken to admit any other or greater title or interest in the lands embraced within the territories described in said treaty in said tribes or bands of Indians than existed in them upon the acquisition of said territories from Mexico by the laws thereof.

Done at Box Elder, this thirtieth day of July, A. D. 1863.

James Duane Doty,
Governor and acting superintendent of Indian affairs in Utah Territory.

P. Edw. Connor,
Brigadier-General U. S. Volunteers, commanding District of Utah.

Pokatello, his x mark, chief.

Toomontso, his x mark, chief.

Sanpitz, his x mark, chief.

Tosowitz, his x mark, chief.

Yahnoway, his x mark, chief.

Weerahsoop, his x mark, chief.

Pahragoosahd, his x mark, chief.

Tahkwetoonah, his x mark, chief.

Omashee, (John Pokatelloaposs brother,) his x mark, chief.

Witnesses:

Robt. Pollock, colonel Third Infantry, C. V.

M. G. Lewis, captain Third Infantry, C. V.

S. E. Jocelyn, first lieutenant Third Infantry, C. V.

Jos. A. Gebone, Indian interpreter.

John Barnard, jr., his x mark, special interpreter.

Willis H. Boothe, special interpreter.

Horace Wheat

TREATY WITH THE FLATHEADS, ETC., 1855.

JULY 16, 1855. | 12 STATS., 975. | RATIFIED MAR. 8, 1859. | PROCLAIMED APR. 18, 1859.

Articles of agreement and convention made and concluded at the treaty-ground at Hell Gate, in the Bitter Root Valley, this sixteenth day of July, in the year one thousand eight hundred and fifty-five, by and between Isaac I. Stevens, governor and superintendent of Indian affairs for the Territory of Washington, on the part of the United States, and the undersigned chiefs, head-men, and delegates of the confederated tribes of the Flathead, Kootenay, and Upper Pend d' Oreilles Indians, on behalf of and acting for said confederated tribes, and being duly authorized thereto by them. It being understood and agreed that the said confederated tribes do hereby constitute a nation, under the name of the Flathead Nation, with Victor, the head chief of the Fleathead tribe, as the head chief of the said nation, and that the several chiefs, head-men, and delegates, whose names are signed to this treaty, do hereby, in behalf of their respective tribes, recognise Victor as said head chief.

ARTICLE 1.

The said confederated tribe of Indians hereby cede, relinquish, and convey to the United States all their right, title, and interest in and to the country occupied or claimed by them, bounded and described as follows, to wit: Commencing on the main ridge of the Rocky Mountains at the forty-ninth (49th) parallel of latitude, thence westwardly on that parallel to the divide between the Flat-bow or Kootenay River and Clarke's Fork, thence southerly and southeasterly along said divide to the one hundred and fifteenth degree of longitude, (115°,) thence in a southwesterly direction to the divide between the sources of the St. Regis Borgia and the Coeur d' Alene Rivers, thence southeasterly and southerly along the main ridge of the Bitter Root Mountains to the divide between the head-waters of the Koos-koos-kee River and of the southwestern fork of the Bitter Root River, thence easterly along the divide separating the waters of the several tributaries of the Bitter Root River from the waters flowing into the Salmon and Snake Rivers to the main ridge of the Rocky Mountains, and thence northerly along said main ridge to the place of beginning.

ARTICLE 2.

There is, however, reserved from the lands above ceded, for the use and occupation of the said confederated tribes, and as a general Indian reservation, upon which may be placed other friendly tribes and bands of Indians of the Territory of Washington who may agree to be consolidated with the tribes parties to this treaty, under the common designation of the Flathead Nation, with Victor, head chief of the Flathead tribe, as the head chief of the nation, the tract of land included within the following boundaries, to wit:

Commencing at the source of the main branch of the Jocko River; thence along the divide separating the waters flowing into the Bitter Root River from those flowing into the Jocko to a point on Clarke's Fork between the Camash and Horse Prairies; thence northerly to, and along the divide bounding on the west the Flathead River, to a point due west from the point half way in latitude between the northern and southern extremities of the Flathead Lake; thence on a due east course to the divide whence the Crow, the Prune, the So-ni-el-em and the Jocko Rivers take their rise, and thence southerly along said divide to the place of beginning.

All which tract shall be set apart, and, so far as necessary, surveyed and marked out for the exclusive use and benefit of said confederated tribes as an Indian reservation. Nor shall any white man, excepting those in the employment of the Indian department, be permitted to reside upon the said reservation without permission of the confederated tribes, and the superintendent and agent. And the said confederated tribes agree to remove to and settle upon the same within one year after the ratification of this treaty. In the meantime it shall be lawful for them to reside upon any ground not in the actual claim and occupation of citizens of the United States, and upon any ground claimed or occupied, if with the permission of the owner or claimant.

Guaranteeing however the right to all citizens of the United States to enter upon and occupy as settlers any lands not actually occupied and cultivated by said Indians at this time, and not included in the reservation above named. And provided, That any substantial improvements heretofore made by any Indian, such as fields enclosed and cultivated and houses erected upon the lands hereby ceded, and which he may be compelled to abandon in consequence of this treaty, shall be valued under the direction of the President of the United States, and payment made therefore in money, or improvements of an equal value be made for said Indian upon the reservation; and no Indian will be required to abandon the improvements aforesaid, now occupied by him, until their value in money or improvements of an equal value shall be furnished him as aforesaid.

ARTICLE 3.

And provided, that if necessary for the public convenience roads may be run through the said reservation; and, on the other hand, the right of way with free access from the same to the nearest public highway is secured to them, as also the right in common with citizens of the United States to travel upon all public highways.

The exclusive right of taking fish in all the streams running through or bordering said reservation is further secured to said Indians; as also the right of taking fish at all usual and accustomed places, in common with citizens of the Territory, and of erecting temporary buildings for curing; together with the privilege of hunting, gathering roots and berries, and pasturing their horses and cattle upon open and unclaimed land.

ARTICLE 4.

In consideration of the above cession, the United States agree to pay to the said confederated tribes of Indians, in addition to the goods and provisions distributed to them at the time of signing this treaty the sum of one hundred and twenty thousand dollars, in the following manner—that is to say: For the first year after the ratification hereof, thirty-six thousand dollars, to be expended under the direction of the President, in providing for their removal to the reservation, breaking up and fencing farms, building houses for them, and for such other objects as he may deem necessary. For the next four years, six thousand dollars each year; for the next five years, five thousand dollars each year; for the next five years, four thousand dollars each year; and for the next five years, three thousand dollars each year.

All which said sums of money shall be applied to the use and benefit of the said Indians, under the direction of the President of the United States, who may from time to time determine, at his discretion, upon what beneficial objects to expend the same for them, and the superintendent of Indian affairs, or other proper officer, shall each year inform the President of the wishes of the Indians in relation thereto.

ARTICLE 5.

The United States further agree to establish at suitable points within said reservation, within one year after the ratification hereof, an agricultural and industrial school, erecting the necessary buildings, keeping the same in repair, and providing it with furniture, books, and stationery, to be located at the agency, and to be free to the children of the said tribes, and to employ a suitable instructor or instructors. To furnish one blacksmith shop, to which shall be attached a tin and gun shop; one carpenter's shop; one wagon and plough-maker's shop; and to keep the same in repair, and furnished with the necessary tools. To employ two farmers, one blacksmith, one tinner, one gunsmith, one carpenter, one wagon and plough maker, for the instruction of the Indians in trades, and to assist them in the same. To erect one saw-mill and one flouring-mill, keeping the same in repair and furnished with the necessary tools and fixtures, and to employ two millers. To erect a hospital, keeping the same in repair, and provided with the necessary medicines and furniture, and to employ a physician; and to erect, keep in repair, and provide the necessary furniture the buildings required for the accommodation of said employees. The said buildings and establishments to be maintained and kept in repair as aforesaid, and the employees to be kept in service for the period of twenty years.

And in view of the fact that the head chiefs of the said confederated tribes of Indians are expected and will be called upon to perform many services of a public character, occupying much of their time, the United States further agree to pay to each of the Flathead, Kootenay, and Upper Pend d'Oreilles tribes five hundred dollars per year, for the term of twenty years after the ratification hereof, as a salary for such persons as the said confederated tribes may select to be their head chiefs, and to build for them at suitable points on the reservation a comfortable house, and properly furnish the same, and to plough and fence for each of them ten acres of land. The salary to be paid to, and the said houses to be occupied by, such head chiefs so long as they may be elected to that position by their tribes, and no longer. And all the expenditures and expenses contemplated in this article of this treaty shall be defrayed by the United States, and shall not be deducted from the annuities agreed to be paid to said tribes. Nor shall the cost of transporting the goods for the annity payments be a charge upon the annuities, but shall be defrayed by the United States.

ARTICLE 6.

The President may from time to time, at his discretion, cause the whole, or such portion of such reservation as he may think proper, to be surveyed into lots, and assign the same to such individuals or families of the said confederated tribes as are willing to avail themselves of the privilege, and will locate on the same as a permanent home, on the same terms and subject to the same regulations as are provided in the sixth article of the treaty with the Omahas, so far as the same may be applicable.

ARTICLE 7.

The annuities of the aforesaid confederated tribes of Indians shall not be taken to pay the debts of individuals.

ARTICLE 8.

The aforesaid confederated tribes of Indians acknowledge their dependence upon the Government of the United States, and promise to be friendly with all citizens thereof, and pledge themselves to commit no depredations upon the property of such citizens. And should any one or more of them violate this pledge, and the fact be satisfactorily proved before the agent, the property taken shall be returned, or, in default thereof, or if injured or destroyed, compensation may be made by the Government out of the annuities. Nor will they make war on any other tribe except in self-defence, but will submit all matters of difference between them and other Indians to the Government of the United States, or its agent, for decision, and abide thereby. And if any of the said Indians commit any depredations on any other Indians within the jurisdiction of the United States, the same rule shall prevail as that prescribed in this article, in case of depredations against citizens. And the said tribes agree not to shelter or conceal offenders against the laws of the United States, but to deliver them up to the authorities for trial.

ARTICLE 9.

The said confederated tribes desire to exclude from their reservation the use of ardent spirits, and to prevent their people from drinking the same; and therefore it is provided that any Indian belonging to said confederated tribes of Indians who is guilty of bringing liquor into said reservation, or who drinks liquor, may have his or her proportion of the annuities withheld from him or her for such time as the President may determine.

ARTICLE 10.

The United States further agree to guaranty the exclusive use of the reservation provided for in this treaty, as against any claims which may be urged by the Hudson Bay Company under the provisions of the treaty between the United States and Great Britain of the fifteenth of June, eighteen hundred and forty-six, in consequence of the occupation of a trading-post on the Pru-in River by the servants of that company.

ARTICLE 11.

It is, moreover, provided that the Bitter Root Valley, above the Loo-lo Fork, shall be carefully surveyed and examined, and if it shall prove, in the judgment of the President, to be better adapted to the wants of the Flathead tribe than the general reservation provided for in this treaty, then such portions of it as may be necessary shall be set apart as a separate reservation for the said tribe. No portion of the Bitter Root Valley, above the Loo-lo Fork, shall be opened to settlement until such examination is had and the decision of the President made known.

ARTICLE 12.

This treaty shall be obligatory upon the contracting parties as soon as the same shall be ratified by the President and Senate of the United States.

In testimony whereof, the said Isaac I. Stevens, governor and superintendent of Indian affairs for the Territory of Washington, and the undersigned head chiefs, chiefs and principal men of the Flathead, Kootenay, and Upper Pend d'Oreilles tribes of Indians, have hereunto set their hands and seals, at the place and on the day and year hereinbefore written.

Isaac I. Stevens, [L. S.]

Governor and Superintendent Indian Affairs W. T.

Victor, head chief of the Flathead Nation, his x mark. [L. S.]

Alexander, chief of the Upper Pend d'Oreilles, his x mark. [L. S.]

Michelle, chief of the Kootenays, his x mark. [L. S.]

Ambrose, his x mark. [L. S.]

Pah-soh, his x mark. [L. S.]

Bear Track, his x mark. [L. S.]

Adolphe, his x mark. [L. S.]

Thunder, his x mark. [L. S.]

Big Canoe, his x mark. [L. S.]

Kootel Chah, his x mark. [L. S.]

Paul, his x mark. [L. S.]

Andrew, his x mark. [L. S.]

Michelle, his x mark. [L. S.]

Battiste, his x mark. [L. S.]

Kootenays.

Gun Flint, his x mark. [L. S.]

Little Michelle, his x mark. [L. S.]

Paul See, his x mark. [L. S.]

Moses, his x mark. [L. S.]

James Doty, secretary.

R. H. Lansdale, Indian Agent.

W. H. Tappan, sub Indian Agent.

Henry R. Crosire,

Gustavus Sohon, Flathead Interpreter.

A. J. Hoecken, sp. mis.

William Craig.

TREATY OF FORT LARAMIE WITH SIOUX, ETC., 1851.

COMPILED AND EDITED BY CHARLES J. KAPPLER. WASHINGTON : GOVERNMENT PRINTING OFFICE, 1904.

Sept. 17, 1851. | 11 Stats., p. 749.

Articles of a treaty made and concluded at Fort Laramie, in the Indian Territory, between D. D. Mitchell, superintendent of Indian affairs, and Thomas Fitzpatrick, Indian agent, commissioners specially appointed and authorized by the President of the United States, of the first part, and the chiefs, headmen, and braves of the following Indian nations, residing south of the Missouri River, east of the Rocky Mountains, and north of the lines of Texas and New Mexico, viz, the Sioux or Dahcotahs, Cheyennes, Arrapahoes, Crows. Assinaboines, Gros-Ventre Mandans, and Arrickaras, parties of the second part, on the seventeenth day of September, A. D. one thousand eight hundred and fifty-one.[a]

ARTICLE 1.

The aforesaid nations, parties to this treaty. having assembled for the purpose of establishing and confirming peaceful relations amongst themselves, do hereby covenant and agree to abstain in future from all hostilities whatever against each other, to maintain good faith and friendship in all their mutual intercourse, and to make an effective and lasting peace.

ARTICLE 2.

The aforesaid nations do hereby recognize the right of the United States Government to establish roads, military and other posts, within their respective territories.

ARTICLE 3.

In consideration of the rights and privileges acknowledged in the preceding article, the United States bind themselves to protect the aforesaid Indian nations against the commission of all depredations by the people of the said United States, after the ratification of this treaty.

ARTICLE 4.

The aforesaid Indian nations do hereby agree and bind themselves to make restitution or satisfaction for any wrongs committed, after the ratification of this treaty, by any band or individual of their people, on the people of the United States, whilst lawfully residing in or passing through their respective territories.

ARTICLE 5.

The aforesaid Indian nations do hereby recognize and acknowledge the following tracts of country, included within the metes and boundaries hereinafter designated, as their respective territories, viz:

The territory of the Sioux or Dahcotah Nation, commencing the mouth of the White Earth River, on the Missouri River: thence in a southwesterly direction to the forks of the Platte River: thence up the north fork of the Platte River to a point known as the Red Bute, or where the road leaves the river; thence along the range of mountains known as the Black Hills, to the head-waters of Heart River; thence down Heart River to its mouth; and thence down the Missouri River to the place of beginning.

The territory of the Gros Ventre, Mandans, and Arrickaras Nations, commencing at the mouth of Heart River; thence up the Missouri River to the mouth of the Yellowstone River; thence up the Yellowstone River to the mouth of Powder River in a southeasterly direction, to the head-waters of the Little Missouri River; thence along the Black Hills to the head of Heart River, and thence down Heart River to the place of beginning.

The territory of the Assinaboin Nation, commencing at the mouth of Yellowstone River; thence up the Missouri River to the mouth of the Muscle-shell River; thence from the mouth of the Muscle-shell River in a southeasterly direction until it strikes the head-waters of Big Dry Creek; thence down that creek to where it empties into the Yellowstone River, nearly opposite the mouth of Powder River, and thence down the Yellowstone River to the place of beginning.

The territory of the Blackfoot Nation, commencing at the mouth of Muscle-shell River; thence up the Missouri River to its source; thence along the main range of the Rocky Mountains, in a southerly direction, to the head-waters of the northern source of the Yellowstone River; thence down the Yellowstone River to the mouth of Twenty-five Yard Creek; thence across to the head-waters of the Muscle-shell River, and thence down the Muscle-shell River to the place of beginning.

The territory of the Crow Nation, commencing at the mouth of Powder River on the Yellowstone; thence up Powder River to its source; thence along the main range of the Black Hills and Wind River Mountains to the

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[a] This treaty as signed was ratified by the Senate with an amendment changing the annuity in Article 7 from fifty to ten years, subject to acceptance by the tribes. Assent of all tribes except the Crows was procured (see Upper Platte C., 570, 1853, Indian Office) and in subsequent agreements this treaty has been recognized as in force (see post p. 776).

head-waters of the Yellowstone River; thence down the Yellowstone River to the mouth of Twenty-five Yard Creek; thence to the head waters of the Muscle-shell River; thence down the Muscle-shell River to its mouth; thence to the head-waters of Big Dry Creek, and thence to its mouth.

The territory of the Cheyennes and Arrapahoes, commencing at the Red Bute, or the place where the road leaves the north fork of the Platte River; thence up the north fork of the Platte River to its source; thence along the main range of the Rocky Mountains to the head-waters of the Arkansas River; thence down the Arkansas River to the crossing of the Santa Fé road; thence in a northwesterly direction to the forks of the Platte River, and thence up the Platte River to the place of beginning.

It is, however, understood that, in making this recognition and acknowledgement, the aforesaid Indian nations do not hereby abandon or prejudice any rights or claims they may have to other lands; and further, that they do not surrender the privilege of hunting, fishing, or passing over any of the tracts of country heretofore described.

ARTICLE 6.

The parties to the second part of this treaty having selected principals or head-chiefs for their respective nations, through whom all national business will hereafter be conducted, do hereby bind themselves to sustain said chiefs and their successors during good behavior.

ARTICLE 7.

In consideration of the treaty stipulations, and for the damages which have or may occur by reason thereof to the Indian nations, parties hereto, and for their maintenance and the improvement of their moral and social customs, the United States bind themselves to deliver to the said Indian nations the sum of fifty thousand dollars per annum for the term of ten years, with the right to continue the same at the discretion of the President of the United States for a period not exceeding five years thereafter, in provisions, merchandise, domestic animals, and agricultural implements, in such proportions as may be deemed best adapted to their condition by the President of the United States, to be distributed in proportion to the population of the aforesaid Indian nations.

ARTICLE 8.

It is understood and agreed that should any of the Indian nations, parties to this treaty, violate any of the provisions thereof, the United States may withhold the whole or aportion of the annuities mentioned in the preceding article from the nation so offending, until, in the opinion of the President of the United States, proper satisfaction shall have been made.

In testimony whereof the said D. D. Mitchell and Thomas Fitzpatrick commissioners as aforesaid, and the chiefs, headmen, and braves, parties hereto, have set their hands and affixed their marks, on the day and at the place first above written.

D. D. Mitchell

Thomas Fitzpatrick

Commissioners.

Sioux:

Mah-toe-wha-you-whey, his x mark.

Mah-kah-toe-zah-zah, his x mark.

Bel-o-ton-kah-tan-ga, his x mark.

Nah-ka-pah-gi-gi, his x mark.

Mak-toe-sah-bi-chis, his x mark.

Meh-wha-tah-ni-hans-kah, his x mark.

Cheyennes:

Wah-ha-nis-satta, his x mark.

Voist-ti-toe-vetz, his x mark.

Nahk-ko-me-ien, his x mark.

Koh-kah-y-wh-cum-est, his x mark.

Arrapahoes:

Bè-ah-té-a-qui-sah, his x mark.

Neb-ni-bah-seh-it, his x mark.

Beh-kah-jay-beth-sah-es, his x mark.

Crows:

Arra-tu-ri-sash, his x mark.

Doh-chepit-seh-chi-es, his x mark.

Assinaboines:

Mah-toe-wit-ko, his x mark.

Toe-tah-ki-eh-nan, his x mark.

Mandans and Gros Ventres:

Nochk-pit-shi-toe-pish, his x mark.

She-oh-mant-ho, his x mark.

Arickarees:

Koun-hei-ti-shan, his x mark.

Bi-atch-tah-wetch, his x mark.

In the presence of—

A. B. Chambers, secretary.

S. Cooper, colonel, U. S. Army.

R. H. Chilton, captain, First Drags.

Thomas Duncan, captain, Mounted Riflemen.

Thos. G. Rhett, brevet captain R. M. R.

W. L. Elliott, first lieutenant R. M. R.

C. Campbell, interpreter for Sioux.

John S. Smith, interpreter for Cheyennes.

Robert Meldrum, interpreter for the Crows.

H. Culbertson, interpreter for Assiniboines and Gros Ventres.

Francois L'Etalie, interpreter for Arick arees.

John Pizelle, interpreter for the Arrapahoes.

B. Gratz Brown.

Robert Campbell.

Edmond F. Chouteau.

TREATY WITH THE SHOSHONI—NORTHWESTERN BANDS, 1863.

COMPILED AND EDITED BY CHARLES J. KAPPLER. WASHINGTON : GOVERNMENT PRINTING OFFICE, 1904

July 30, 1863. | 13 Stats., 663. | Ratified Mar. 7, 1864 | Proclaimed Jan. 17, 1865.

Articles of agreement made at Box Elder, in Utah Territory, this thirtieth day of July, A. D. one thousand eight hundred and sixty-three, by and between the United States of America, represented by Brigadier-General P. Edward Connor, commanding the military district of Utah, and James Duane Doty, commissioner, and the northwestern bands of the Shoshonee Indians, represented by their chiefs and warriors:

ARTICLE 1.

It is agreed that friendly and amicable relations shall be re-established between the bands of the Shoshonee Nation, parties hereto, and the United States, and it is declared that a firm and perpetual peace shall be henceforth maintained between the said bands and the United States.

ARTICLE 2.

The treaty concluded at Fort Bridger on the 2nd day of July, 1863; between the United States and the Shoshonee Nation, being read and fully interpreted and explained to the said chiefs and warriors, they do hereby give their full and free assent to all of the provisions of said treaty, and the same are hereby adopted as a part of this agreement, and the same shall be binding upon the parties hereto.

ARTICLE 3.

In consideration of the stipulations in the preceding articles, the United States agree to increase the annuity to the Shoshonee Nation five thousand dollars, to be paid in the manner provided in said treaty. And the said northwestern bands hereby acknowledge to have received of the United States, at the signing of these articles, provisions and goods to the amount of two thousand dollars, to relieve their immediate necessities, the said bands having been reduced by the war to a state of utter destitution.

ARTICLE 4.

The country claimed by Pokatello, for himself and his people, is bounded on the west by Raft River and on the east by the Porteneuf Mountains.

ARTICLE 5.

Nothing herein contained shall be construed or taken to admit any other or greater title or interest in the lands embraced within the territories described in said treaty in said tribes or bands of Indians than existed in them upon the acquisition of said territories from Mexico by the laws thereof.

Done at Box Elder, this thirtieth day of July, A. D. 1863.

James Duane Doty,
Governor and acting superintendent of Indian affairs in Utah Territory.

P. Edw. Connor,
Brigadier-General U. S. Volunteers, commanding District of Utah.

Pokatello, his x mark, chief.

Toomontso, his x mark, chief.

Sanpitz, his x mark, chief.

Tosowitz, his x mark, chief.

Yahnoway, his x mark, chief.

Weerahsoop, his x mark, chief.

Pahragoosahd, his x mark, chief.

Tahkwetoonah, his x mark, chief.

Omashee, (John Pokatelloaposs brother,) his x mark, chief.

Witnesses:

Robt. Pollock, colonel Third Infantry, C. V.

M. G. Lewis, captain Third Infantry, C. V.

S. E. Jocelyn, first lieutenant Third Infantry, C. V.

Jos. A. Gebone, Indian interpreter.

John Barnard, jr., his x mark, special interpreter.

Willis H. Boothe, special interpreter.

Horace Wheat.

PALEONTOLOGICAL RESOURCE MANAGEMENT

.01 Purpose

This Manual Section provides uniform policy and direction for the Bureau of Land Management's Paleontological Resource Management Program. This Manual Section is supplemented by Paleontological Resources Handbook 8270-1 (USDI-BLM 1998a). The Handbook contains detailed procedures and standards for implementing this Manual Section.

.02 Objectives

The overall objective of BLM's Paleontological Resource Management Program is to provide a consistent and comprehensive approach in all aspects relating to the management of paleontological resources including identification, evaluation, protection and use. The specific objectives of this program are to:

A. Locate, evaluate, manage and protect, where appropriate, paleontological resources on the public lands.

B. Facilitate the appropriate scientific, educational, and recreational uses of paleontological resources, such as research and interpretation.

C. Ensure that proposed land uses, initiated or authorized by BLM, do not inadvertently damage or destroy important paleontological resources on public lands.

D. Foster public awareness and appreciation of our Nation's rich paleontological heritage.

.03 Authority

BLM manages paleontological resources principally under the following authorities:

A. Federal Land Policy and Management Act of 1976 (P.L. 94-579) requires that the public lands be managed in a manner that protects the ". . . quality of scientific . . ." and other values. The Act also requires the public lands to be inventoried and provides that permits may be required for the use, occupancy and development of the public lands.

B. National Environmental Policy Act of 1969 (P.L. 91-190) requires that ". . . important historic, cultural and natural aspects of our national heritage . . ." be protected, and that ". . . a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences . . . in planning and decision making. . . " be followed.

C. Title 43 C FR, Subpart 8365 addresses the collection of invertebrate fossils and, by administrative extension, fossil plants.

D. Title 43 CFR, Subpart 3622 addresses the free use collection of petrified wood as a mineral material for non-commercial purposes.

E. Title 43 CFR Subpart 3621 addresses collection of petrified wood for specimens exceeding 250 pounds in weight.

F. Title 43 CFR, Subpart 3610 addresses the sale of petrified wood as a mineral material for commercial purposes.

G. Title 43 CFR, Subparts 3802 and 3809 address protection of paleontological resources from operations authorized under the mining laws.

H. Title 43 CFR, Subpart 8200 addresses procedures and practices for the management of lands that have outstanding natural history values, such as fossils, which are of scientific interest.

I. Title 43 CFR, Subpart 1610.7-2 addresses the establishment of Areas of Critical Environmental Concern for the management and protection of significant natural resources, such as paleontological localities.

J Title 43 CFR Subpart 8364 addresses the use of closure or restriction of public lands to protect resources. Such closures or restrictions may be used to protect important fossil localities.

K. Title 43 CFR Subpart 8365.1-5 addresses the willful disturbance, removal and destruction of scientific resources or natural objects and 8360.0-7 identifies the penalties for such violations.

L. Title 36 CFR, Subpart 62 addresses procedures to identify, designate and recognize National Natural Landmarks, which include fossil areas.

M. 18 USC Section 641 addresses the unauthorized collection of fossils as a type of Government property.

N. Secretarial Order 3104 grants to BLM the authority to issue paleontological resource use permits for lands under its jurisdiction.

O. Onshore Oil and Gas Order No. 1 and 43 CFR Title 3162 provide for the protection of natural resources and other environmental concerns and can be used to protect paleontological resources where appropriate.

P. Offer to Lease and Lease for Oil and Gas Form 3100-11 provides for inventories and other short term studies to protect objects of scientific interest, such as significant fossil occurrences, and requires that operations conducted under oil and gas leases minimize adverse impacts to natural and cultural resources.

Q. Federal Cave Resources Protection Act of 1988 (P.L. 100-691) and Title 43 CFR Subpart 37 address protection of significant caves and cave resources, including paleontological resources.

.04 Responsibility

A. The Director, through the Assistant Director, Renewable Resources and Planning, and the Group Manager, Cultural Heritage, Wilderness, Special Areas and Paleontology is responsible for overall direction, leadership and coordination of BLM's paleontology program. This is accomplished through the development of program policies, strategies, procedures and directives, and in coordination with other Headquarters Groups as appropriate. This responsibility also includes coordination with other Federal agencies and Departments at the National Headquarters level.

B. State Directors, within their respective geographical jurisdictions, are responsible for the implementation of Bureau policies respecting paleontological resources, and for monitoring and evaluating the effectiveness of the paleontology program within their State.

C. Field Office Managers are responsible for the local management and oversight of paleontological resources within their geographical jurisdictions by ensuring that Bureau policies are implemented and coordinated, and that established program technical standards are met.

D. Regional Paleontologists provide professional expertise in paleontology. They serve as program coordinators for all States in their respective regions, and as the program interface between field offices and the Washington Office. In some cases, the Regional Paleontologist also serves as the State Office Paleontologist.

E. Paleontology Program Contacts are responsible for working and coordinating with BLM Regional Paleontologists to assure implementation of paleontology program policies, identification and resolution of program needs, and to carry out other day-to-day activities associated with the management of paleontological resources. BLM State Offices and Field Offices shall identify such a paleontology program contact from their staff. While the Cultural Heritage Program is responsible for the providing base funding for paleontology, such office contacts may be selected from any disciplinary background, but should be chosen for their technical background in a related discipline, e.g. geology, biology, botany, archaeology, paleontological training, availability and their personal interest in supporting the goals of the paleontology program.

F. Other BLM staff are responsible within their normal duties for helping to ensure that the Bureau's goals for the management and protection of paleontological resources are met.

.05 References

A. Departmental Manual 411 DM 1-3, Policies and Standards for Managing Museum Collections, 1997.

B. Departmental Manual 516 DM, National Environmental Policy Act of 1969.

C. 44 L.D. 325, August 6, 1915, affirmed that fossils are not minerals within the meaning of the mining laws of the United States and are not locatable under such laws.

.06 Policy

A. The paleontological resources found on the public lands are recognized by the BLM as constituting a fragile and nonrenewable scientific record of the history of life on earth, and so represent an important and critical component of America's natural heritage. BLM will exercise stewardship of these resources as a part of its public land management responsibility. In meeting this responsibility, it shall be BLM's policy to:

1. Actively work with other Federal, State and Local Government Agencies, professional organizations, private landowners, educational institutions and other interested parties to enhance and further the Bureau's and the American public's needs and objectives for paleontological resources.

2. Consider paleontological resource management a distinct BLM program, to be given full and equal consideration in all its land use planning and decision making actions.

3. Maintain a staff of professional paleontologists to provide BLM decision makers with the most current and scientifically sound paleontological resource data and advice.

4. Mitigate adverse impacts to paleontological resources as necessary.

5. Facilitate appropriate public and scientific use of and interest in paleontological resources.

6. Utilize the additional skills and resources of the Bureau's recreation and minerals programs to develop and implement interpretation strategies and products to enhance public understanding, appreciation and enjoyment of paleontological resources.

7. Vigorously pursue the protection of paleontological resources from theft, destruction and other illegal or unauthorized uses.

8. Authorize land tenure adjustments, when appropriate, as means to protect paleontological localities.

.07 File and Records Maintenance

A. Paleontological locality information is non-public information listed under Category 3 of the Bureau's Record Access Category Listing and may be withheld if the following Freedom of Information Act (FOIA) exemptions apply.

1. Exemption 2 covers records related solely to the internal practices of an agency which are of a more substantial internal matter, the disclosure of which would risk circumvention of a legal requirement.

2. Exemption 3 provides for the withholding of information prohibited from disclosure by another statute. Paleontological resources located within significant caves, for example, are thus protected by the confidentially requirements of the Federal Cave Resources Protection Act.

3. Exemption 4 protects trade secrets and other privileged or confidential information. The release of paleontological locality information for areas where consultants or others, such as educational institutions, are permitted, for example, could severely jeopardize their work.

B. Locality data and reports associated with permits, mitigation work or other paleontology projects shall be maintained as permanent records.

.08 Relationships to other Bureau Programs

A. Resource Protection/Mitigation. All BLM programs that may have an adverse impact on paleontological resources through their actions or authorizations are responsible as benefiting activities for funding any necessary resource inventories, evaluations or other work needed to avoid or mitigate adverse impacts on paleontological resources.

B. Cultural Resources. In rare instances, paleontological resources may be found in association with cultural resources. Such occurrences fall under the provisions of the Archeological Resources Protection Act. In the event of such an occurrence, the authorized BLM Manager, in consultation with the State Office or Regional Paleontologist and the Cultural Resource Specialist will evaluate the discovery and determine an appropriate course of action that will safeguard both the paleontological and archaeological materials. The Cultural Resource Program also provides the Paleontological Resource Management Program with its linkage to the Bureau's budget system. Therefore, these program personnel are responsible for identifying and addressing funding needs for paleontology in the BLM's annual budget process.

C. Recreation. Paleontological resources have high public education and recreation values. Such values can be enhanced by publishing guides to selected collecting areas and developing interpretive trails. Working collaboratively, BLM Paleontologists and Recreation Specialists can develop responsible and outstanding recreational and educational opportunities involving paleontological resources that will enhance public understanding of fossils and the science of paleontology, and showcase BLM's stewardship role.

D. Minerals Management. Minerals management can have both positive and negative effects on paleontological resources. Mineral development, and related activities such as road building, can expose new fossil localities to scientific research or recreained in 43 CFR 3809 and 43 CFR 3162.5, as implemented and supplemented by Onshore Oil and Gas Order No. 1, provide means, where necessary, to protect paleontological resources which may be adversely impacted by mineral development. BLM geologists can also provide valuable assistance in helping identify fossil localities, and develop interpretive and educational material related to paleontology. Fossils are not locatable under the mining laws.

E. Land Use Planning and Environmental Review. The management of paleontological resources shall be guided by and be in accordance with approved BLM land use plans.

1. Paleontological resources constitute a fragile and non-renewable scientific record of the history of life on earth. Once damaged, destroyed, or improperly collected, their scientific and educational value may be greatly reduced or lost forever. In addition to their scientific, educational and recreational values, paleontological resources can be used to inform land managers about interrelationships between the biological and geological components of ecosystems over long periods of time. It is the policy of BLM, therefore, to manage paleontological resources for these values, and to mitigate adverse impacts to them. To accomplish this goal, paleontological resources must be professionally identified and evaluated. Their values should be adequately addressed and integrated fully into the Bureau's planning system and environmental analysis documents. Generally, considerable time, money and effort may be saved by considering paleontological data as early as possible in the decision making process.

2. Paleontological Data Collection and Analysis for Planning. Locating, evaluating and classifying paleontological resources, and developing management strategies for them, must be based on the best scientific information available. Paleontological expertise is necessary to help managers and decision makers resolve issues involving paleontological resources. Because paleontological expertise is scarce within BLM, State Office or Regional Paleontologists are available and should be called upon to provide direct assistance or to identify other appropriate sources of assistance. (Detailed procedures and standards for planning for paleontological resources are contained in Handbook 8270-1 Chapter II. (USDI-BLM 1998a))

3. Mitigation. Adverse impacts to paleontological resources shall be mitigated as necessary. Any field surveys and/or inventories intended to protect paleontological resources will be targeted to specific areas or be issue driven as needed. Unless other arrangements have been made by the local manager, project proponents shall bear all costs associated with this activity. In keeping with the historical policies adopted by the Department of the Interior and the BLM, these mitigation requirements apply primarily to vertebrate fossils. However, where noteworthy occurrences of invertebrate or plant fossils are known or

expected, the same planning and mitigation policies and procedures shall be followed. (See 8270-1 Handbook Chapter III for mitigation standards and procedures. (USDI-BLM 1998a))

.09 Paleontological Resource Use

The desired outcome of managing paleontological resources is to ensure their availability for scientific, educational and recreational uses. Such uses include collection, site interpretation, study and exhibition. Collection may or may not require a permit (See B. below). In cases where permits are required, the permitting process fulfills several important functions. Permits provide for the proactive management of paleontological resources by alerting managers to the presence of noteworthy occurrences of paleontological resources, their condition and vulnerability. When needed, permits facilitate research by qualified paleontologists and serve as a bridge for communication between land managers and researchers. The permitting process provides appropriate protection to other resources that may be impacted by permitted collecting activities, and provides a consistent administrative structure for BLM's management effort. An efficient and uniform permitting process is also essential to and consistent with BLM's customer-oriented focus.

A. A Paleontological Resource Use Permit is a land use authorization issued to a qualified applicant for the purpose of carrying out various paleontological activities, such as identification, survey, collection or excavation, on lands managed by BLM. Such permits are nonexclusive, noncompetitive, minimum impact permits, and are not subject to Notice of Realty Action, filing fees or cost reimbursement. State Offices are responsible for processing and issuing such permits in consultation with the appropriate Field Office and Regional Paleontologist.

B. Determining the need for a Paleontological Resource Use Permit

1. Invertebrate Fossils, Plant Fossils and Petrified Wood. In accordance with existing regulations, the public lands, except where otherwise posted or prohibited, are open for the collection of invertebrates, plant fossils and petrified wood. (See Section .03, Authority) Permits are not normally required for such collection. (See 8270-1 Handbook for collecting standards. (USDI-BLM 1998a)) However, in some situations, localities containing noteworthy occurrences of such fossils may be closed to collection except under permit. Such closures shall be established through the land use planning process, and shall be carried out in consultation with the BLM Regional Paleontologist.

2. Vertebrate Fossils. Unregulated collection of vertebrate fossils is not allowed in 43 CFR 8365.1-5. Therefore, permits are required for the collection of vertebrate fossils, including their trace fossils, such as trackways and coprolites. Refer to 8270-1 Handbook (USDI-BLM 1998a) for permit procedures.

C. BLM issues two types of Paleontological Resource Use Permits.

1. Survey and Limited Surface Collection Permits are issued to expedite broad ranging survey/reconnaissance work in order to identify vertebrate fossil localities for scientific research, inventory or planning purposes, or in advance of projects which may threaten such localities. Collection of material for carrying out locality (site) investigations and evaluation/characterization studies, and where the use of such small sites as temporary field work stations will be restored to their natural condition within the same work season, is allowed, providing that such activities can ordinarily be expected to result in only negligible surface disturbance, i.e., less than 1 square meter, and can be done with hand tools. Such non-destructive paleontological data collection, inventory, research or monitoring activities are generally deemed to meet the provisions of Chapters 2 and 6, Appendices 1 and 5 respectively, of Departmental MS 516, Categorical Exclusions.

2. Excavation Permits are issued for the collection of vertebrate fossils where surface disturbance exceeds the limits permissible for the survey and limited surface collection work stated in C.1 above.

D. Permit Administration. Permittee qualifications and other matters relating to the administration of Paleontological Resource Use Permits may be found in the 8270-1 Handbook Chapter IV (USDI-BLM 1998a).

E. Commercial Collection. BLM does not authorize the commercial use of fossils collected on public lands. Petrified Wood may be purchased as a mineral material under procedures described in 43 CFR Subpart 3610.

F. Paleontological Resources in Special Areas.

1. Wilderness and Wilderness Study Areas. Paleontological resources may be found in designated Wilderness or Wilderness Study Areas. Scientific research involving collection and removal of paleontological resources is not considered incompatible with the concept of wilderness preservation as provided for in Section 4(b) of the 1964 Wilderness Act. Additionally, paleontological resources are considered to be supplemental values, as provided for in Section 2(c) of the Act. The following provisions are recommended for addressing the management of paleontological resources in such areas:

a. The BLM will permit on a case-by-case basis the survey and limited surface collection of fossils by qualified paleontologists, where such resources have important scientific value. Such activities must be carried out in a manner that would not degrade the wilderness character.

b. The use of motorized transportation or mechanized equipment in a wilderness area is prohibited except when approved as the minimum tool necessary to accomplish the work. Such use must be approved by the State Director.

c. Salvage, excavation and collection of fossils may be done only on a case-by-case basis where the project will not degrade the overall wilderness character of the area and where such activity is needed to preserve paleontological resources.

2. Other Special Management Areas. A variety of Special Area designations may be available to enhance the management and/or protection of paleontological resources. Such designations include Research Natural Areas, National Natural Landmarks and Areas of Critical Environmental Concern. Such areas are established through the land use planning process and shall be done in consultation with the BLM Regional Paleontologists.

G. Collection Management. Fossils collected under a Paleontological Resources Use Permit remain the property of the Federal Government and shall be curated in an approved repository in conformance with the provisions of Departmental Manual 411. BLM managers shall select repositories which can appropriately maintain such collections from public lands and their associated records, and make this information available to BLM upon request. Repositories should be encouraged, if they have not already done so, to establish and maintain electronic databases of specimen, locality and other associated data.

H. Split Estate Lands. Split estate lands are those lands where title to the surface and mineral estate have been severed. Title to the different estates are often held by different parties. In many instances where the surface estate is not owned by the Federal Government, the mineral estate is, and is administered by the BLM. Paleontological resources are considered to be part of the surface estate. If BLM is going to approve an action involving the mineral estate that may affect the paleontological resources, the action should be conditioned with appropriate paleontological mitigation recommendations to protect the interests of the surface owner. In most States the owner may elect to waive these recommendations. Such a waiver shall be documented in the case file.

APPENDIX L – LANDS AND REALTY

Section 102(a)(1) of the Federal Land Policy Management Act (FLPMA) provides that Congress declares that it is the policy of the United States that… "the public lands be retained in Federal ownership, unless as a result of the land use planning procedure provided for in this Act, it is determined that disposal of a particular parcel will serve the national interest;…"

GENERAL INFORMATION PERTAINING TO LAND OWNERSHIP ADJUSTMENTS

Land Exchanges

This type of real estate transaction is typically processed under the authority of the FLPMA and involves the discretionary, voluntary exchange of lands or interests in lands between the Federal government and a non-Federal party. It is required that:

- Sec. 206(b) - the Federal and non-Federal lands involved be located in the same state
- Sec. 206(b) - the Federal and non-Federal lands be of equal value, or in certain circumstances, approximately equal in value
- Sec. 206(a) - exchanges be completed only after a finding that the public interest would be well served

In considering whether an exchange is in the public interest, consideration is given to the opportunity to:

- Sec. 206(a) - achieve better management of Federal lands
- Sec. 206(a) - meet the needs of state and local residents and their economies
- Sec. 206(a) - secure important objectives, including but not limited to, protection of fish and wildlife habitats, cultural resources, watersheds, wilderness and aesthetic values; enhancement of recreation opportunities and public access; consolidation of lands and/or interests in lands; consolidation of split estate; expansion of communities; accommodation of land use authorizations; promotion of multiple-use values; and fulfillment of public needs

In making the public interest determination, there needs to be a finding that:

- the resource values and the public objectives that the Federal lands or interests to be conveyed may serve if retained in Federal ownership are not more than the resource values of the non-Federal lands or interests and the public objectives they could serve if acquired, and
- the intended use of the conveyed Federal lands will not significantly conflict with established management objectives on adjacent Federal lands and Indian trust lands

Land Exchanges vs. Other Methods of Disposal/Acquisition

To help assure the integrity of state and local tax bases, land exchange would be the first priority for both acquisition of non-Federal land and the conveyance of Federal lands into non-Federal ownership of those parcels identified for disposal, except under the following circumstances: 1) where there is a competitive market situation and multiple entities are interested in a parcel of land, land sale may be considered, or 2) where one of the following situations apply, a disposal method other than exchange may be considered: a) resolving inadvertent unauthorized use or occupancy b) providing for community expansion and development c) meeting obligations completing state selections, and d) creating facilities or service for public health, safety and welfare.

Sales

Sales of public lands are authorized under section 203 of FLPMA and offered at not less than fair market value. Public lands determined suitable for sale are offered only on the initiative of the BLM. Such sales have to meet at least one of the following FLPMA sales criteria:

- Sec. 203(a)1) – such tract because of its location or other characteristics is difficult and uneconomic to manage as part of the public lands, and is not suitable for management by another Federal department or agency; or
- Sec. 203(a)(2) – such tract was acquired for a specific purpose and the tract is no longer required for that or any other Federal purpose; or
- Sec. 203(a)(3) – disposal of such tract will serve important public objectives, including but not limited to, expansion of communities and economic development, which cannot be achieved prudently or feasibly on land other than public land and which outweigh other public objectives and values, including, but not limited to, recreation and scenic values, which would be served by maintaining such tract in Federal ownership.

The preferred method of sale of public lands is by competitive bidding at public auction. However, modified competitive bidding may be used to protect on-going uses, to assure compatibility of the possible uses with adjacent lands, or to avoid dislocation of existing users. Direct sale may be used when the public lands offered for sale are completely surrounded by lands in one ownership with no public access, or where the lands are needed by state or local governments or non-profit corporations, or where necessary to protect existing equities in the lands or resolve inadvertent unauthorized use or occupancy.

Conveyance of Federally-Owned Mineral Interests – Section 209(b), FLPMA

Section 209(b) of FLPMA provides for the conveyance of mineral interests owned by the United States where the surface is or will be in non-Federal ownership. There must be a finding that: 1) there are no known mineral values in the land, or 2) that the reservation of the mineral rights in the United States is interfering with or precluding appropriate non-mineral development of the land and that such development is a more beneficial use of the land than mineral development.

Such conveyance of mineral interests can only be made to the existing or proposed record owner of the surface upon payment of administrative costs and the fair market value of the interests being conveyed.

Direct Purchases

Direct purchases of lands or interest in lands would be limited to cases where no practical alternatives exist, high public values would be obtained, and purchase funds are appropriated. Such actions would need to meet the acquisition criteria for the particular alternative being considered.

Methods of Acquisition

Acquisition of lands or interests in lands would be by methods such as exchange, purchase, donation, or public agency jurisdictional transfer.

Methods of Disposal

Disposal methods to implement land ownership adjustment actions would not vary by alternative, and generally would include the following: a) exchanges b) sales c) Recreation and Public Purposes Act conveyances d) airport grants e) public agency jurisdictional transfers f) state grants

Mineral patents are not considered a land ownership adjustment for the purposes of this plan.

LAND OWNERSHIP ADJUSTMENT CRITERIA

Three types of land ownership adjustment criteria will be adopted (retention, disposal, and acquisition) to provide guidance in categorizing BLM administered land, and in making decisions concerning specific actions.

General Criteria

1. Requirements of applicable laws, executive orders, and regulations will be followed.

2. Priority will be determined by the area directly impacted and the significance of the resources in descending order of National, regional, statewide, and local. Both economic and non-economic values will be considered in assessing resource significance.

3. A critical level of significance will be assigned to resource values if they are adversely impacted over an area larger than the specific tract being considered for any land ownership adjustment action.

4. Public value losses which cannot be mitigated will be assigned a higher level of significance than those which can be mitigated.

5. A higher level of significance will be assigned to public values which are associated with solving chronic management problems.

RETENTION CRITERIA

These are land tracts which will likely remain as BLM administered land. Although the underlying philosophy is long-term public ownership, adjustments in retention areas involving exchanges and/or sales may occur when the public interest is served.

1. Areas containing moderate to high resource values and/or characteristics. These include but are not limited to:

- Land along rivers, streams, lakes, dams, ponds, springs, and trails
- Riparian areas, community watersheds and/or flood plains
- Areas that contain T&E species of wildlife or aquatic or vegetation
- Areas with special status wildlife species, or aquatic species or vegetative species
- Important general wildlife habitat areas
- Recreation sites and areas
- Significant cultural resource sites
- Geologic areas containing unique or rare features or formations
- Areas with important or unique forest/woodland values
- Other areas containing moderate to high resource values and/or characteristics

2. Lands with a combination of moderate to high multiple-use values which dictate retention in public ownership.

3. Areas of National environmental significance: These include but are not limited to:

- Wilderness, Wilderness Study Areas and former WSAs being studied for protective management
- Wild & Scenic Rivers
- National Scenic & Historic Trails and Study Trails

- Lands containing nationally significant cultural resource sites nominated to or eligible for the National Register of Historic Places
- National Conservation areas
- Wetlands and Riparian Areas under Executive Order 11990
- Other Congressionally Designated Areas and Study Areas
- Areas of Critical Environmental Concern

4. Areas of National economic significance. These include but are not limited to:

- Designated Mineral Resource Areas where disposal of the surface would unnecessarily interfere with the logical development of the mineral estate, e.g., surface minerals, coal, phosphate, known geologic structures, etc.
- Lands containing strategic minerals needed for National defense.

5. Lands used in support of National defense: These include but are not limited to U.S. Military and National Guard maneuver areas.

6. Areas where future plans will lead to further consolidation and improvement of land patterns and management efficiency.

7. Areas which the general public, state and local government consider suitable for public ownership.

8. Lands withdrawn by the BLM or other Federal agencies for which the purpose of the withdrawal remains valid and the resource uses can be managed concurrently by BLM.

9. Lands that contribute significantly to the stability of the local economy by virtue of Federal ownership.

10. Lands which provide public access and contain previously mentioned public values which, when considered together, warrant their retention.

11. Guidelines for the retention of the mineral estate are fairly well described and are mandated under FLPMA. These require that the mineral estate be reserved by the U.S. in all land disposals except in some cases where exchanges are involved. In exchanges, the mineral estate may be reserved by both parties presuming there will be no material interference with development of the mineral resource due to disposal of the surface estate. If values are equal, mineral estate title may pass with the surface estate.

ACQUISITION CRITERIA

The following criteria will be used to evaluate proposals which would result in the acquisition of non-Federal lands and/or interest in lands through exchange, fee purchase, donation or other transactions. Priority will be determined on the basis of multiple-use analysis. The greater the number of resource programs and public values served, the higher the priority for acquisition. All proposals will be evaluated to determine if the non-Federal lands meet any of the following specific criteria:

1. Contain moderate to high resource values and/or characteristics.

- Land along rivers, streams, lakes, dams, ponds, springs, and trails
- Riparian areas, community watersheds and/or flood plains
- Areas that contain T&E species of wildlife or aquatic or vegetation
- Areas with special status wildlife species, or aquatic species or vegetative species
- Important general wildlife habitat areas
- Recreation sites and areas
- Significant cultural resource sites
- Geologic areas containing unique and/or scarce features
- Areas with important or unique forest/woodland values
- Other areas containing moderate to high resource values and/or characteristics

2. Have the potential for enhancement, manageability or investment opportunity of existing BLM administered lands.

3. Facilitate access to BLM administered land retained for long-term public use.

4. Enhance congressionally designated areas, rivers, or trails.

5. Primarily focused in the "retention" areas. (Acquisition outside of retention areas may be considered if the action leads to and/or facilitates long-term needs or program objectives).

6. Facilitate National, state and local BLM priorities or mission statement needs.

7. Will enhance existing or future activity plans on BLM administered land.

8. Stabilize or enhance local economies or values.

9. Meet long-term BLM land management goals as opposed to short-term BLM land management goals.

10. Are of sufficient size to improve use of adjoining BLM administered land or, if isolated, large enough to allow for the identified potential public land use.

11. Allow for more diverse use, more intensive use, or a change in uses to better fulfill the Bureau's mission.

12. Enhance the opportunity for new or emerging BLM administered land uses or values.

13. Contribute to a wide spectrum of uses or large number of public land users.

14. Secure for the public significant water related land interests. These interests will include lake shore, dam shore, river front, stream, and pond or spring sites.

15. Consolidate mineral estates with surface estates to improve potential for development while improving resource management and economic values of existing BLM administered lands.

Avoid the following when considering acquisition proposals:

Acquiring lands or interests in lands that present management problems that outweigh the expected benefits of such an acquisition, including but not limited to:

- presence of hazardous materials
- abundance of noxious weeds
- access situation is inadequate for managing the property for the purpose(s) for which it would be obtained, etc.
- acquisition of small, isolated tracts

ACCESS CRITERIA

The BLM shall endeavor to maintain existing access, provide future access, and manage access to BLM administered lands in coordination with other Federal agencies, state and local governments, and private landowners.

Specific Access Criteria

1. Obtain access to BLM administered lands in retention areas. (Acquisition of access outside of retention areas may be considered if the action leads to and/or facilitates long term needs or program objectives).

2. Protect, maintain, and manage existing access to BLM administered lands.

3. Manage access to BLM administered lands within BLM's multiple-use mandate.

4. Acquire access on the basis of the following considerations:

- Where there are moderate to high resource values on existing BLM administered land.
- Where there is public demand which is closely tied to resource values.
- Access to larger blocks or parcels of BLM administered land have priority. The presence of important resource values may justify acquiring access to smaller tracts.
- For those projects on BLM administered lands in which substantial public monies have been spent, and in which continuing diverse public use is expected, permanent exclusive access for the general public should be obtained. For lesser investment projects and/or those to which general public use will need to be limited, nonexclusive easements should be obtained.
- Although the Bureau is not required to provide access to mineral resources, the acquisition of such access could be useful in controlling the construction of multiple and unnecessary access routes within the same general area.
- Priority would be placed on acquiring easements on roads where landowners are willing to allow public access through their lands.

DISPOSAL CRITERIA

These are lands identified for potential removal from BLM administration through transfer to other Federal agencies, or by exchange, sale or R&PP Patent to state, county or local public entities, or by exchange or sale to private entities, private groups, private organizations or individuals. Disposal decisions will be made in the public interest based upon the following criteria:

1. Lands with high public values proper for management by other Federal agencies, or state or local governments.

2. Small parcels of BLM administered land contiguous to National Forest land may be considered for transfer to the U.S. Forest Service through a Public Land Order. Other BLM administered land may be considered for transfer where appropriate.

3. Small parcels of BLM administered lands contiguous to State land may be considered for transfer to the Sate of Montana. Other BLM administered land may be considered for transfer where appropriate.

4. Lands of limited public value.

5. Widely scattered parcels which are difficult and uneconomical to manage with anything beyond minimal custodial administration and have no significant public values.

6. Lands which will serve important public objectives (such as community expansion) as provided in FLPMA.

7. Lands where disposal would aid in aggregating or repositioning other BLM administered lands or land resource values in retention areas to facilitate National, state and local objectives.

8. Lands acquired for a specific Federal purpose which are no longer required for that or any other Federal purpose.

9. Lands with general unauthorized use problems, if the lands are not required for public purposes.

10. Lands with unauthorized occupancy use where permanent structures are involved.

Potential Disposal Parcels

The following lands, totaling 8,901 acres, are potentially suitable for disposal through sale under section 203(a) of FLPMA if important recreation, wildlife, watershed, threatened or endangered species habitat, and/or cultural values are not identified during disposal clearance reviews and no viable exchange proposals for them can be identified. These lands would also be available for transfer to another agency or to local governments, as needed, to accommodate community expansion and other public purposes.

Potential Disposal Parcels			
Legal Description			**Acreage**
T. 1 N., R. 6 W.	Section 10	SE¼SE¼	40.00
		SW ¼SE¼	40.00
	Section 11	SW¼SW¼	40.00
	Section 12	NW¼SW¼	40.00
	Section 14	NW¼NW¼	40.00
		SW¼NW¼	40.00
	Section 22	Lot 4	8.09
	Section 27	Lot 5	34.80
		Lot 6	34.80
		Lot 7	22.63
	Section 29	SE¼NE¼	40.00
		NE¼SE¼	40.00
T. 1 N., R. 9 W.	Section 4	Lot 1	22.27
		Lot 2	23.04
		Lot 5	39.52
		N½SW¼	80.00
		SE¼ SW¼	40.00
T. 1 N., R. 11 W.	Section 31	Lot 3	39.95
		Lot 4	39.99
T. 1 N., R. 14 W.	Section 10	Lot 3	43.89
	Section 28	NW¼NE¼	40.00
T. 2 N., R. 1 W.	Section 2	Lot 3	37.91
		Lot 4	37.81
		S½NW¼	80.00
	Section 6	Lot 1	40.70
		Lot 2	40.50
		Lot 3	40.30
		Lot 4	31.76
		Lot 5	32.32
		Lot 6	32.32
		Lot 7	33.59
		SE¼NE¼	40.00
	Section 34	SE¼SW¼	40.00
		S½SE¼	80.00

Potential Disposal Parcels			
Legal Description			Acreage
T. 3 N., R. 1 W.	Section 32	N½	320.00
T. 4 N., R. 2 W.	Section 6	Lot 1	17.32
		Lot 3	15.42
		Lot 4	13.23
		Lot 5	39.37
		Lot 6	39.58
		Lot 7	39.79
		SE¼NE¼	40.00
T. 4 N., R. 2 W.	Section 6	SE¼NW¼	40.00
	Section 24	NE¼NE¼	40.00
		SE¼NE¼	40.00
T. 5 N., R. 3 W.	Section 6	Lot 3	35.13
		Lot 4	39.73
		Lot 5	41.31
		SE¼NW¼	40.00
	Section 19	Lot 4	38.10
T. 6 N., R. 4 W.	Section 3	Segregated Survey	41.02
	Section 5	Lot 12	38.54
		Lot 23	2.70
	Section 8	Lot 3	30.56
		Lot 14	0.47
T. 7 N., R. 3 W.	Section 4	Lot 8	48.47
T. 7 N., R. 4 W.	Section 3	Lot 8	0.43
		Lot 11	0.12
		Lot 12	0.31
		Lot 14	3.19
		Lot 16	0.60
		Lot 21	0.01
	Section 4	Lot 28	0.67
		Lot 29	0.66
	Section 7	Lot 16	0.43
	Section 8	Lot 22	0.11
		Lot 23	0.09
		Lot 27	0.54
		Lot 31	1.0008
		Lot 34	1.36
		Lot 41	0.19
		Lot 42	0.33
	Section 9	Lot 14	1.89
		Lot 15	0.10
		Lot 16	0.13

Potential Disposal Parcels			
Legal Description			Acreage
T. 7 N., R. 4 W.	Section 9	Lot 17	0.26
		Lot 20	0.05
		Lot 21	1.16
		Lot 22	0.0034
		Lot 23	2.08
		Lot 24	15.31
		Lot 25	0.35
		Lot 26	2.99
		Lot 27	2.90
		Lot 28	0.75
	Section 10	Lot 11	0.04
		Lot 14	0.85
		Govt. Lot 14	0.36
		Lot 15	0.10
		Lot 17	1.79
	Section 15	Lot 3	0.96
		Lot 8	0.56
		Lot 9	6.65
		Lot 10	4.30
	Section 16	Lot 3	0.02
		Lot 4	0.10
	Section 17	Lot 4	0.11
		Lot 18	0.15
		Lot 19	0.28
	Section 18	Lot 10	2.32
	Section 21	Lot 7	1.30
		Lot 8	0.07
		Lot 9	0.13
		Lot 10	0.69
		Lot 11	1.35
		Lot 17	1.88
		Lot 19	0.07
		Lot 20	0.17
	Section 24	SE¼NE¼	40.00
		NE¼SE¼	40.00
	Section 35	Segregated Survey	8.5 est.
T. 8 N., R. 3 W.	Section 9	Lot 6	2.27
		SE¼NE¼	40.00
	Section 10	Lot 1	38.93
		Lot 6	1.79
		Lot 7	31.87

Potential Disposal Parcels

Legal Description			Acreage
T. 8 N., R. 3 W.	Section 10	Lot 10	29.34
		Lot 11	0.26
		Lot 16	19.74
	Section 15	NE¼NW¼	40.00
	Section 29	SE¼SE¼	40.00
	Section 32	NW¼NW¼NW¼	10.00
T. 8 N., R. 4 W.	Section 12	(metes and bounds)	5.00 est.
	Section 13	NW¼NW¼	40.00
		Lot 1	39.39
	Section 14	Lot 20	4.58
		Lot 21	4.15
		Lot 22	2.71
		(metes and bounds)	2.72
	Section 23	Lot 15	5.87
		Lot 16	0.93
		Lot 17	6.94
		Lot 18	0.85
T. 9 N., R. 1 W.	Section 30	Lot 7	0.01
		Lot 8	7.55
		Unsurveyed Lots in NW¼SE¼	8.441
T. 9 N., R. 2 W.	Section 20	Lot 7	2.36
		Lot 9	28.04
	Section 21	Lot 2	31.33
		Lot 6	20.27
		Lot 7	0.22
		Lot 8	0.90
		Lot 9	0.90
		Lot 10	0.45
		Lot 5	0.12
	Section 22	Lot 6	19.46
	Section 32	Lot 14	1.43
T. 9N., R. 3 W.	Section 17	Lot 7	31.43
		Lot 8	4.95
		Lot 9	18.84
		Lot 10	2.56
		Lot 11	2.56
		Lot 12	2.56
		Lot 13	2.56
		Lot 14	2.56
		Lot 15	2.56
		Lot 16	2.56

Potential Disposal Parcels

Legal Description			Acreage
T. 9N., R. 3 W.	Section 18	Lot 12	6.10
		Lot 13	10.06
		Lot 19	4.65
	Section 32	Lot 14	1.43
T. 10 N., R. 1 W.	Section 6	(metes and bounds)	.640
		(metes and bounds)	.06
		(metes and bounds)	.57
	Section 32	SE¼NE¼	40.00
	Section 33	Segregated Survey	18.00
T. 10 N., R. 4 W.	Section 36	Lot 41 (metes and bounds)	.023
T. 10 N., R. 5 W.	Section 3	Lot 22	18.09
		Lot 23	31.78
		Lot 24	35.06
		Lot 25	1.06
		Lot 26	39.09
		Lot 27	10.89
		Lot 28	20.24
		Lot 29	3.88
	Section 4	Lot 14	34.93
	Section 5	Lot 7	41.20
		Lot 16	12.67
		Lot 17	42.85
		Lot 18	31.50
		Lot 20	41.26
		Lot 21	18.77
		Lot 23	1.77
		Lot 24	21.22
		Lot 26	1.31
	Section 13	Lot 18	40.41
T. 11 N., R. 4 W.	Section 36	Lot 2	20.31
		Lot 4	8.26
		Lot 6	.82
		Lot 7	6.27
T. 11 N., R. 5 W.	Section 4	Lot 14	40.71
	Section 9	Lot 8	41.86
	Section 15	Lot 3	17.73
	Section 16	Lot 5	44.09
	Section 27	Lot 4	43.69
	Section 28	Lot 6	40.11
	Section 34	Lot 8	35.21
		Lot 9	28.32

Potential Disposal Parcels			
Legal Description			Acreage
T. 11 N., R. 5 W	Section 36	Lot 8	38.99
		Lot 9	40.31
		Lot 11	12.00
T. 12 N., R. 5 W.	Section 5	Non-lotted vacant federal land bounded by Lots 5 & 6 in Patent 585745	12.00
T. 12 N., R. 6 W.	Section 15	SW¼ SE¼	40.00
	Section 36	Lot 35 (metes and bounds)	.10
T. 12N., R. 7 W.	Section 23	SE¼NE¼	40.00
		SE¼NW¼	40.00
T. 14 N., R. 3 W.	Section 4	Lot 6 (metes and bounds)	3.89
	Section 27	Lot 10 (metes and bounds)	.20
T. 14 N., R. 4 W.	Section 4	Lot 4	36.58
		SE¼SE¼	40.00
	Section 9	Lot 9	39.14
		Lot 10	16.31
		Lot 11	16.84
		Lot 12	17.78
		Lot 13	12.80
		Lot 15	16.33
	Section 10	SE¼ NE¼	40.00
	Section 28	(metes and bounds)	1.0 est.
T. 1 N., R. 2 E.	Section 14	W½W½	160.00
T. 2 N., R. 2 E.	Section 12	N½	320.00
T. 3 N., R. 1 E.	Section 12	NW¼	160.00
T. 3 N., R. 7 E.	Section 30	E½NE¼	80.00
T. 4 N., R. 2 E.	Section 34	SW¼	160.00
T. 4 N., R. 3 E.	Section 26	SW¼SE¼	40.00
T. 4 N., R. 6 E.	Section 6	Lot 3	21.20
		Lot 4	15.76
T. 5 N., R. 5 E.	Section 26	NW¼SW¼	40.00
	Section 34	N½NE¼NE¼	20.00
		N½S½NE¼NE¼	10.00
		N½NW¼NE¼	20.00
		N½S½NW¼NE¼	10.00
		E½NE¼NE¼NW¼	5.00
		W½NW¼NE¼NW¼	5.00
		NW¼SW¼NE¼NW¼	2.50
		NE¼SE¼NE¼NW¼	2.50
		N½NW¼NW¼	20.00
		N½S½NW¼NW¼	10.00

Potential Disposal Parcels			
Legal Description			**Acreage**
T. 5 N., R. 5 E.	Section 34	S½NW¼SW¼	20.00
		SW¼SW¼	40.00
T. 6 N., R. 3 E.	Section 20	W½SW¼	80.00
T. 7 N., R. 3 E.	Section 6	Lot 7	39.15
		SE¼SW¼	40.00
T. 8 N., R. 1 E.	Section 8	NE¼NE¼	40.00
	Section 18	NW¼NE¼	40.00
		NE¼NW¼	40.00
		E½NW¼NW¼	20.00
T. 8 N., R. 3 E.	Section 5	Segregated Survey	59.4
T. 9 N., R. 2. E.	Section 16	Lot 1	18.24
		Lot 5	12.19
		Lot 6	39.22
T. 10 N., R. 1 E.	Section 14	Lot 3	39.69
		Lot 4	39.73
		Lot 5	39.94
	Section 17	NW¼SW¼	40.00
T. 1 S., R. 1 W.	Section 4	W½SE¼	80.00
T. 1 S., R. 6 W.	Section 4	SW¼NW¼	40.00
	Section 12	N½NE¼	80.00
		NW¼	160.00
		W½SW¼	80.00
		SE¼SW¼	40.00
		NE¼SE¼	40.00
		S½SE¼	80.00
	Section 14	All	640.00
T. 2 S., R. 9 W.	Section 14	SE¼NE¼	40.00
		NE¼SE¼	40.00
		SE¼SE¼	40.00
	Section 24	NE¼SW¼	40.00
T. 2 S., R. 9 E.	Section 24	SE¼SE¼	40.00
T. 1 S., R. 1 E.	Section 14	NW¼NE¼	40.00
T. 2 S., R. 2 E.	Section 3	NE¼SW¼	40.00
T. 2 S., R. 10 E.	Section 2	SW¼NW¼	40.00
		NW¼SW¼	40.00
		SW¼SW¼	40.00
	Section 3	SW¼NE¼	40.00
		SE¼	160.00
	Section 10	NE¼	160.00
		NE¼NW¼	40.00
T. 2 S., R. 12 E.	Section 27	NE¼NE¼	40.00

Potential Disposal Parcels			
Legal Description			**Acreage**
T. 3 S., R. 12 E.	Section 9	W½NW¼	80.00
T. 4 S., R. 8 E.	Section 14	NE¼NE¼	40.00
		S½NE¼	80.00
		SE¼	160.00
T. 4 S., R. 9 E.	Section 20	NW¼SE¼	40.00
		S½SE¼	80.00
	Section 30	SW¼	160.00
	Section 32	NW¼SW¼	40.00
T. 6 S., R. 8 E.	Section 9	S½,SE¼SE ¼, Tract 37	.70

APPENDIX M – FLUID MINERALS

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Resource: Grizzly Bear -Distribution Zone 1182

Resource: Gray Wolf – Former Northwest Montana Recovery Area Endangered Population 1182

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Resource: Sage Grouse Winter/Spring Range 1182

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Resource: Bald Eagle Nest Sites/Breeding Habitat 1185

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Resource: Peregrine Falcon Nest Sites/Breeding Habitat 1185

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Resource: Threatened, Endangered, and Special Status Species 1186

Resource: Westslope Cutthroat Trout Habitat (90-99% pure) 1186

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Resource: Grizzly Bear – Recovery Zone 1191

Resource: Grizzly Bear - Distribution Zone 1191

Resource: Gray Wolf – Former Northwest Montana Recovery Area Endangered Population 1191

Resource: Prairie Dog Towns 1192

Resource: Sage Grouse Winter/Spring Range 1192

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Resource: Sage Grouse Breeding Habitat 1192

Resource: Wildlife Management Areas 1192

Resource: Big Game Winter/Spring Range 1192

Resource: Elk Calving/Big Game Birthing Areas 1192

Resource: Bighorn Sheep Yearlong Range (Including Core Areas) 1192

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Resource: Peregrine Falcon Nest Sites/Breeding Habitat 1193

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Resource: Bull Trout 1194

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Resource: Prairie Dog Towns 1199

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Resource: Sage Grouse Breeding Habitat 1200

Resource: Wildlife Management Areas 1200

Resource: Big Game Winter/Spring Range 1200

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Resource: Bald Eagle Nest Sites/Breeding Habitat 1200

Resource: Bald Eagle Nest Sites/Breeding Habitat 1201

Resource: Peregrine Falcon Nest Sites/Breeding Habitat 1201

Resource: Ferruginous Hawk Breeding Territories 1201

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Resource: Westslope Cutthroat Trout Habitat (99-100% pure) 1202

Resource: Fluvial and Adfluvial Arctic Grayling Habitat 1202

Resource: Bull Trout 1202

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Resource: National Register of Historic Properties Eligible Properties/Districts 1204

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FLUID MINERALS

OIL AND GAS REASONABLY FORESEEABLE DEVELOPMENT (RFD)

INTRODUCTION

At the time the 1984 Headwaters RMP was prepared little additional leasing was anticipated to take place because most available leases had already been acquired under existing established leasing regulations with appropriate stipulations for special conditions. It was also anticipated that a relatively large number of permits to drill might be sought, given the accelerated level of exploration activity that was being driven by economic conditions at the time and relatively new discovery of prospects for deep structurally trapped oil in the Montana Overthrust Belt. Laws, regulations, and rules were in-place to provide guidance with these leasing and permitting activities. It was anticipated that oil and gas drilling would be a part of the foreseeable future of resource development within the Planning Area.

Despite the flurry of exploration activity in the Montana Overthrust Belt in 1983, the only two areas of oil and gas production were in Teton and Ponderosa counties, east of the Rocky Mountain Front in areas that have since been removed from the Planning Area.

The Reasonably Foreseeable Development scenario is an estimate of oil and gas activity expected because of resumed oil and gas leasing in the Planning Area. The scenario is hypothetical in that drilling may occur anywhere in the planning area where an oil and gas lease allowing surface occupancy is issued. Actual drilling proposals that result from leasing, if any, will likely differ in location from those anticipated by this RFD scenario. It is also possible that leasing could result in either more or fewer drilling proposals than presented in the scenario.

The RFD scenario attempts to portray the most reasonable and likely number of wells expected from a leasing decision on the Butte Field Office Planning Area. It is derived from knowledge of the USGS plays, Energy Information Administration price forecasts, oil and gas occurrence and development potential classifications for the Planning Area, and historical activity.

Development potential is a ranking system, which is created so planners can evaluate the potential cumulative impacts of an oil and gas leasing decision on a designated area. BLM petroleum geologists rank the development potential of the planning area based on the probability, at this point in time, of oil and gas drilling occurring in the future. It is important to understand that development potential is a dynamic ranking system, which changes with time as new data and ideas become available. The development potential can also change as a function of the economics of oil supply and demand.

OCCURRENCE AND DEVELOPMENT POTENTIAL

Occurrence and Development Potential Rankings

BLM staff geologists have classified the potential for occurrence and development of oil and gas resources within the Butte Field Office Planning Area. Their analysis is based on bedrock geologic mapping, geophysical data, and 110 oil and gas wells drilled in Planning Area. A summary of the used for discussion and development of the occurrence and development potential sections of this report can be found in the mineral report prepared for this RMP. The potential for oil and gas resource development within the Planning Area is shown on **Figure A-1**.

On **Figure A-1**, areas have been designated as having moderate, low, and very low potential for the occurrence and development of oil and gas resources. As with the occurrence potential, there are no areas of "high" development potential within the Butte Field Office Planning Area. High development potential areas occur only within proven producing petroleum provinces or in areas with a significant number of hydrocarbon "shows". Areas of moderate development potential have a significant thickness of sedimentary section present that includes possible source and reservoir rocks. An area having a low potential for development has a thin sedimentary section present or there is insufficient subsurface data available to analyze the potential. It also lacks source or reservoir rocks or is metamorphosed. An area of very low development potential has no sedimentary section at the surface or insufficient data for a different classification. These areas also include areas of Federal lands that are unavailable for leasing. Development potential is not a prediction of precise future drilling locations and should not be used as a gauge of future interest or lack of interest in leasing. Oil and gas companies have numerous sources of proprietary data not available to the BLM (such as seismic data or internal geologic reports), which they use prior to making financial commitments to lease or drill. Therefore, even though an area is rated as very low development potential at this time with a low probability for any wells being drilled, a company may still be interested in leasing that area, should it be made available.

Drilling Activity Forecast

In order for the BLM to be able to analyze the effects of renewed oil and gas leasing, and possible impacts related to exploration, development, and cumulative effects, it is necessary to estimate how many wells industry might drill in the next 20 years. The following RFD scenario has been developed using historical oil and gas development, and oil "play" information from the USGS, potential development maps and other data from BLM files, and a number of other technical sources.

The BLM has mapped the potential for occurrence of oil and gas under the Butte Field Office Planning Area and the potential for industry to develop those possible resources. The classification of development potential is depicted on **Figure A-1.** From these maps and other information, including leasing history and past and present economics, a forecast of the number of wells that might be drilled in the Planning Area on lands of all mineral ownerships is made.

Based on this analysis, an estimate was made that as many as nineteen (19) conventional oil and gas wildcat wells (exploratory wells drilled in an area with no existing production) might be drilled in the Butte Field Office Planning Area in the next 15 to 20 years (**Table 1**). Of these nineteen (19) wells, it is estimated that thirteen (13) would be "dry" holes (no economically producible oil or gas is discovered). Dry holes would be plugged and abandoned with surface reclamation occurring shortly afterward. It is further estimated that six (6) of the wells could have oil or gas discoveries, with two located on Federal minerals, and the others located on private or State lands. Each of the discovery wells would probably prompt additional step-out wells. A "step-out well" is a well drilled adjacent to or near a proven well to establish the limits and continuity of the oil or gas reservoir and/or to assist with production. It was estimated that a total of twelve (12) step-out wells would be drilled, two for each discovery. In addition to conventional oil and gas wells, it is anticipated that as many as 40 wells (**Table 1**) would be drilled for coal bed natural gas in limited and scattered areas of known sub-bituminous coal resources located Gallatin and Park Counties; most likely in the Trail Creek Road area near Bozeman Pass (Livingston and Trail Creek Fields).

The first four general geographic areas within the Butte Field Office Planning Area, where conventional oil and gas exploration is predicted to occur are shown on **Figure A-1**. Each of the four areas is associated with one or more play areas described above in the section entitled USGS Hydrocarbon Provinces and Plays. It is anticipated that the 15 projected wildcat wells would be drilled somewhere within the boundaries of these four play areas. (**Table 1**)

Area # 1 - Area #1 is referred to on **Figure A-1** as the "Southern Deerlodge Valley Basin Area". This area occurs in the southernmost portion of a fault bounded Tertiary-aged basin that is located in the Deerlodge Valley. Along the eastern edge of this basin volcanic rocks obscure a thin section of Tertiary age basin fill sediments that in turn overlie Boulder Batholith rocks (Kirk 2005). Further to the west within this basin, rocks of Miocene to Eocene age have been encountered in previous drilling. The rocks are all non-marine and consist of sands and gravels of alluvial channels interlayered with sand, silt, and clay-rich alluvial overbank deposits that are interspersed with fine-grained sediments deposited in lakes and marshes. These sediments have accumulated in thickness as great as 10,000 feet (3,048 meters). Fluvial sandstones are thought to be potential reservoir rocks with the source of oil and gas being either organic material buried deeply in the Tertiary basin proper or having migrated from Paleozoic sediments that lie beneath the Tertiary basin fill or across the basin margin faults. The thickest and most complete section of Paleozoic rocks lies to the west of the holes shown in the area of moderate potential (**Figure A-1**). Two holes have been drilled within the Planning Area and five more have been drilled in a similar geologic setting immediately to the north of this area. These holes were drilled from 6,411 feet (1,954 meters) to as much as 11,774 feet (3,589 meters) deep (Kirk 2005). One well, the Amoco 1 Johnson, encountered good oil shows in the Tertiary basin fill sediments. Two exploratory wells for oil and gas might be expected in the next 15-20 years in this portion of the

Table 1
Drilling Activity Forecast (RFD)
Mineral Assessment Report

Area	Total Wildcat Wells	Dry Holes (Wildcats)	Wildcat Discoveries	Step-out Wells	Commodity
Area 1	2	2	0	0	
Area 2	5	4	1	2	Gas
Area 3	4	3	1	2	Gas
Area 4	4	2	1 deep 1 shallow	2 2	Gas Oil
Barrett Corp. Wells	4	2	2	4	Gas
Total Conventional Wells	**19**	**13**	**6**	**12**	
Area 5 (Coalbed Natural Gas Only)	**16**	**10**	**6**	**24**	**Coal bed Natural Gas**

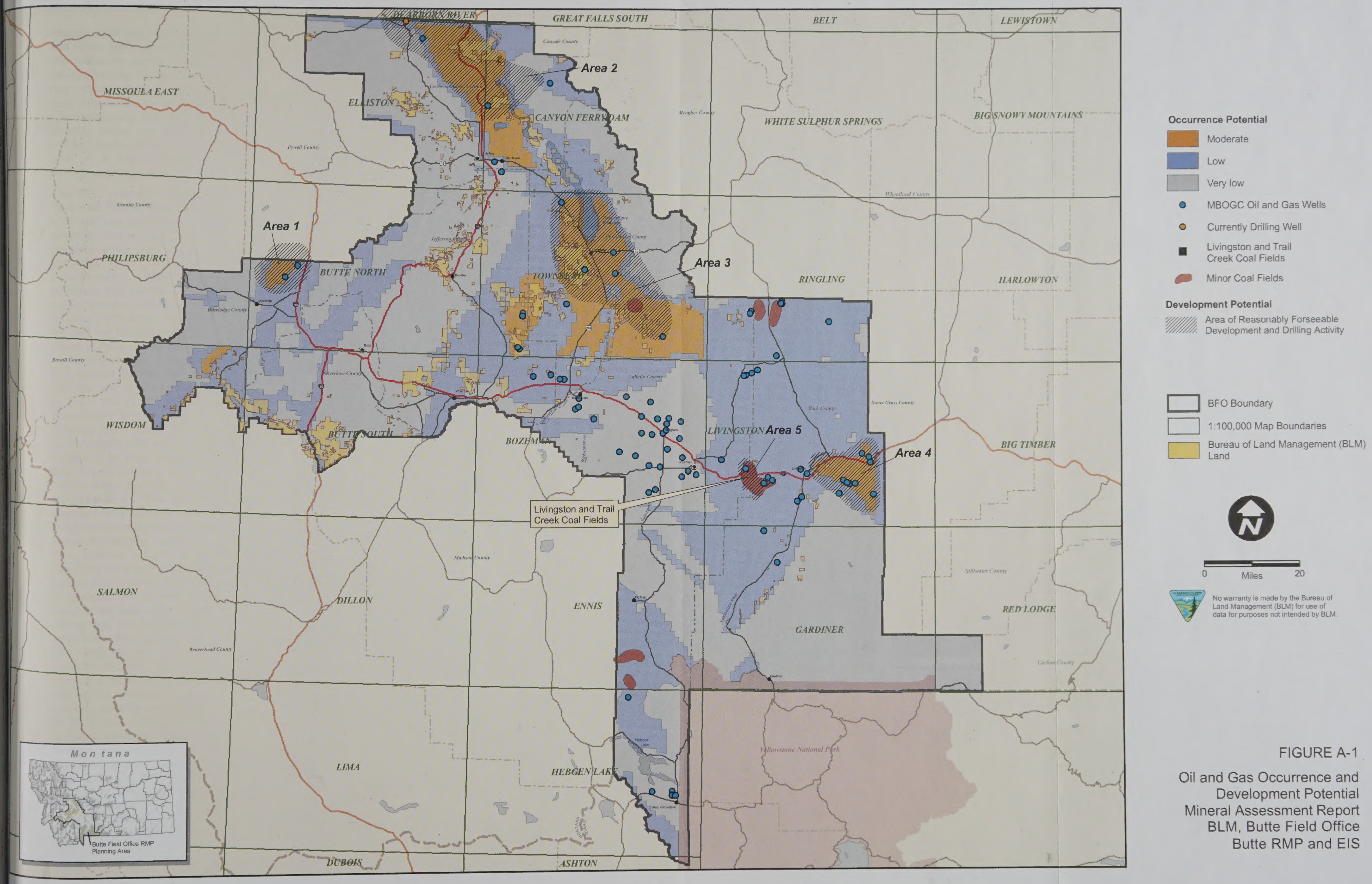

DEARBORN RIVER
GREAT FALLS SOUTH
BELT
LEWISTOWN
Cascade County
Area 2
MISSOULA EAST
ELLISTON
CANYON FERRY DAM
Meagher County
WHITE SULPHUR SPRINGS
BIG SNOWY MOUNTAINS
Powell County
Granite County
Wheatland County
Area 1
PHILIPSBURG
BUTTE NORTH
TOWNSEND
Area 3
RINGLING
HARLOWTON
Deerlodge County
Ravalli County
Gallatin County
Silverbow County
Park County
Sweet Grass County
WISDOM
BUTTE SOUTH
BOZEMAN
LIVINGSTON
Area 5
Area 4
BIG TIMBER
Livingston and Trail Creek Coal Fields
Madison County
Stillwater County
SALMON
DILLON
ENNIS
RED LODGE
GARDINER
Beaverhead County
Carbon County
Yellowstone National Park
LIMA
HEBGEN LAKE
DUBOIS
ASHTON
Montana
Butte Field Office RMP Planning Area
Occurrence Potential
Moderate
Low
Very low
MBOGC Oil and Gas Wells
Currently Drilling Well
Livingston and Trail Creek Coal Fields
Minor Coal Fields
Development Potential
Area of Reasonably Forseeable Development and Drilling Activity
BFO Boundary
1:100,000 Map Boundaries
Bureau of Land Management (BLM) Land
N
0
Miles
20
No warranty is made by the Bureau of Land Management (BLM) for use of data for purposes not intended by BLM.

FIGURE A-1

Oil and Gas Occurrence and
Development Potential
Mineral Assessment Report
BLM, Butte Field Office
Butte RMP and EIS

Planning Area. They would probably lie to the north and west of the holes shown, closer to basin margin faults with potentially thicker sequences of Paleozoic source rocks underlying Tertiary basin fill adjacent to the fault zone. As only about 20 percent of the land within this basin is underlain by federally administered subsurface mineral rights and more than 87 percent of the surface is privately owned (no BLM surface ownership), it is unlikely that any of the wells would be drilled on federal lands. It is also unlikely that there would be any discoveries in this area.

Area #2 - Area #2 is referred to on **Figure A-1** as the "Imbricate Thrust Zone". The area occurs both to the north and east of Helena, Montana, in a sequence of sediments that are thick and structurally thickened by imbricate thrust faulting associated with the Eldorado and Reff thrust faults. Here Cenozoic sediments unconformably overly Mesozoic and Paleozoic sediments, and basement Precambrian-age rocks. Only two oil and gas wells have been completed in this area between 1975 and 1990. One, the Getty well, was spudded in Mississippian Lodgepole Limestone and drilled in Paleozoic sediments to a final depth of 12,731 feet (3,880 meters). It encountered eleven thrust faults that repeated the Lodgepole Limestone eight (8) times. The other well drilled by Arco, was completed at a depth of 5,002 feet (1,525 meters). It was spudded in the Precambrian Belt sediments and drilled through the Eldorado thrust fault at 2,500 feet (762 meters) and into good potential host rocks of the Mississippian Madison Formation, in which it remained until the bottom of the hole. Unocal drilled a third, very deep (17,818 feet or 5,431 meters) dry well, in the northern portion of this area (**Table 1**). The recently drilled Suncor well, described in the Exploration Drilling section, is present in the northernmost portion of the Planning Area on the Sieban Ranch near Flesher Pass. Area 2 is thought to have moderate oil and gas potential because of the significant thicknesses of Paleozoic sediment (known to contain good reservoir and source rocks) in a zone that is complicated and repeated by thrust faulting that can create stratigraphic and structurally controlled traps by folding and the juxtapositioning of rocks across the thrust faults. Five wells are expected to be drilled in this area within the next 15-20 years. One of these wells is predicted to have significant shows of oil and gas warranting offset drilling of two additional wells. The tests in this area can be deep and expensive, and the structure complex and difficult to understand. Most of the BLM lands in Area 2 occur in two continuous blocks and when combined with split estate lands with federal minerals make up about 20% of the entire area. The large contiguous area in the northeastern portion of Area 2 lies to the east of the intensely imbricated thrust fault zone that has seen exploration drilling along the western margin of this play area. It is possible that one or more of the five exploration wells could be drilled on federal lands, but with a small likelihood of a discovery.

Areas #3 - Area #3 is referred to as the "Helena Salient Gas Play Zone". This zone occurs over a very large area in the east-central portion of the Planning Area (**Figure A-1**). The area is underlain by Jurassic (locally Cretaceous) through Cambrian age rocks in a sediment package as much as 10,000 feet (3,048 meters) thick. The area has been thrust faulted along north-south structures that have resulted in a series of parallel north-south anticlines and synclines. The entire sequence can be overlain by 1,600 feet (488 meters) (in the west) to as much as 5,000 feet in the east (1,524 meters) of volcanics in the Elkhorn Mountain area. Hydrocarbons have been reported from a well along the east flank of the Mauldow Basin in a well drilled to 11,592 feet (3,533 meters) into Precambrian rock. Gas shows were reported from Cambrian sediments at a depth of about 11,000 feet (3,353 meters). Elsewhere in the area, several shallow wells (<1,005 feet or 306 meters) had oil shows in the Cambrian and Devonian portion of the section. It may be necessary to drill through sub-thrust Precambrian rocks to find deep potential reservoir rocks (10,000-12,000 feet or 3,048-3,658 meters) in the western portion of the area and 15,000-25,000 feet (4,572-7,620 meters) in the eastern portion of the area. Areas of moderate potential in the Helena Salient area are coincident with the location of mapped anticlinal structures. Three wells have been drilled since 1975, one of which was a dry hole drilled in 1991. Four wells are anticipated in the next 15-20 years, additional shows are expected, and one discovery well is predicted with one or two offset wells (limited number of wells because of depth and cost of drilling). Although the BLM owns surface and mineral rights to some 37,000 acres, about 20% of Area 3) more than half of that area lies within the Limestone Hill Montana Army National Guard Training area, which is contaminated with unexploded military ordinance and the subject of a current Legislative EIS that proposes to withdraw the area from future mineral entry. It is unlikely that any federal wells would be drilled in Area 3. Mineral withdrawal normally does not apply to access for the Mineral Leasing Act, therefore access for fluid mineral drilling within the Limestone Hills Training Area may be possible. Assuming the issue involving safe access with respect to unexploded ordinance can be resolved one well may be drilled on Federal lands within the Limestone Hills Training Area.

Area #4 - Area #4 consists of the "Crazy Mountain Oil and Gas Play" on **Figure A-1**. This area occupies most of the northern portions of Gallatin and Park Counties in the easternmost portion of the Planning Area as a broad extensive area of potential oil and gas resources. In particular the area east of Livingston appears to have a moderate potential. Non-marine Upper Cretaceous rocks of the Livingston group cover most of the area and range in thickness from 9,000 feet (2,743 meters) (in the west between Belgrade and Bozeman) to about 1,000 feet (305 meters) along the eastern Planning Area boundary.

Concealed beneath these sediments are Cretaceous marine sediments and beneath them a complete sequence of Paleozoic sediments that have locally been thrust faulted, repeating the section. In this area, the Superior 22-25 Windsor well was drilled on the Hunter Anticline to a depth of 8,990 feet (2,740 meters). This well encountered gas in the Cretaceous Eagle sandstone at 1,950 feet (594 meters). Thrust faults were encountered in this well that bottomed in Cambrian sediments, suggesting that multiple stacked targets may be present at depths of 10,000-20,000 feet (3,048-3,658 meters), in addition to the shallow Cretaceous gas targets. Numerous anticlines have been identified in the section that may represent structural traps. Six wells have been drilled since 1975 and none in recent years (post 1990). It is envisioned that four (4) wells may be drilled in this area including one deep well east of Livingston around the interstate and three shallow wells exploring for Cretaceous gas resources. It is envisioned that the deep well and one of the shallow wells would yield discoveries that warranted step-out drilling of two holes for each discovery. These wells will be either on National Forest System Lands, or more likely, on lands with private mineral rights that make up about 94% of Area 4.

Area #5 - Other places within the Butte Field Office Planning Area, where gas exploration is predicted to occur are areas of coal bed natural gas potential associated with known sub-bituminous coal deposits. Areas of coal bed natural gas potential where activity is predicted in the reasonably foreseeable development scenario occur in one area labeled Area 5 on **Figure A-1**. Overall it is envisioned that initially ten exploration wells would be drilled, and that six of these would discover coal bed natural gas resources that would warrant the drilling of an additional 24 step-out wells to develop the resources (**Table 1**). These would all likely be non-federal wells.

The reasonably foreseeable development scenarios for these areas have been developed for Gallatin and Park Counties by the Bureau of Land Management and the Montana Board of Oil and Gas Conservation (BLM and MBOGC, 2003). It has been estimated that as many as five to 15 wells would be drilled in Gallatin County and that of these, as many as five to 10 would be producing wells from one field (BLM and State of Montana, 2003). Two locations were permitted for exploration drill holes for coal bed natural gas on untested private land in section 13 and 14 of T. 2 S., R. 7E. in the Trail Creek coal field by the state of Montana in 2001. The wells were scheduled to be drilled to depths of about 5,500 feet (1,676 meters) to test the Upper Cretaceous-age Telegraph Creek-Eagle Sandstone interval along the crest of an anticlinal structure. However, legal challenges involving Gallatin County and the formation of a local zoning district tied up the drilling process and the permits to drill expired in January of 2003. Legal issues need to be resolved in the Trail Creek area before drilling of this previously permitted well might be undertaken. The BLM administers a small number of isolated tracts of split estate minerals in the Trail Creek coal deposit area, but most of the exploration potential lies on private land with separated surface and mineral estate. Assuming that natural gas prices remain high, it is likely that exploration drilling will ultimately be permitted on private land in this area.

In Park County it has been estimated that as many as 10-25 coal bed natural gas exploratory wells might be drilled with as many as 10 to 20 becoming producing wells also from one field (BLM and state of Montana, 2003).

The Bill Barrett Corporation recently (May 2, 2007) initiated a four well drilling program in northern Park County within the Butte Field Office boundaries. The four locations are located in T. 4 N., R. 8 E. and T. 5 N., R. 8 E., None of the locations are located on Federal minerals. The first well in the program (the Draco #10-15, NW1/4, SE1/4, Sec. 15, T. 4N, R. 8E) to be spud in has reached total depth and it has apparently had production casing set (September 14, 2007, Rocky Mountain Oil Journal). The Press has announced that it will be tested in the fall of 2007. The second well is being drilled as this is written (October, 2007). For purposes of this RMP it is assumed by the BLM that two of the wells in this drilling program will be producing wells and that these two wells would each have two producing development wells drilled of which one would be on BLM minerals. The BLM has also assumed that these would be gas wells. This area is an actual prospect that is being drilled. The BLM does not have detailed information on the prospect and does not wish to guess on its size and surface dimensions. As such we have not defined it as a specific area.

Surface Disturbance Impacts

This part of the Reasonable Foreseeable Development Scenario includes information to characterize the type of disturbance projected. The first section **Table 2** predicts the number of acres of ground surface disturbance resulting from exploration and field production activities, regardless of surface ownership. The calculation of acres disturbed relies upon assumptions derived from past exploration activity in western Montana including the Dillon Field Office and the Butte Field Office and existing production from the Overthrust Belt and south central Montana . All calculations assume a maximum acreage figure for analysis purposes if past activities show a range (e.g., 3.5 acres would be used if the range is 2.5-3.5 acres). This assumption was made in order to portray what the largest amount of disturbance could reasonably be expected to be. Reclaimed lands are also included in these calculations. Although no production exists in the Butte Field Office, there have been 110 test wells in the general area of the Butte Field Office. The area is still considered a wildcat area with no commercial discoveries. Therefore, in order to model a

Table 2 – Estimation of Surface Disturbance Assumptions

Conventional Oil and Gas

- The maximum area cleared per well pad would be **3.5 acres** (about 380 ft. x 400 ft.) and 2.3 acres would be stabilized in about 2 years.
- The maximum area cleared per access road per well would be **17 acres** (about 40 ft. x 18480 ft.) and 9 acres would be stabilized in about 2 years.
- All field gathering pipelines for gas (2-4 inch diameter) will follow existing or new access roads and no additional disturbance would result.
- The maximum area cleared for trunk lines to transport gas from four different fields to the existing transmission lines running through the Butte Field Office would be **254.5 acres** (about 25 ft. x 443,520 ft.) and the entire area of disturbance would be stabilized in about 2 years. All perennial stream crossings would use horizontal drilling to avoid disturbance to the stream, its bed, and banks.
- Produced oil would be trucked from the well sites.
- Dry and abandoned wells would be reclaimed.

Coal Bed Natural Gas

- The maximum area disturbed per well site would be **0.25 acres** per well pad. Most sites are not cleared (no pad is constructed).
- Access to individual well sites would be two track trails.
- Surface disturbance for field and sales compressors would be 0.5 miles.
- Gathering lines from the well sites to the field and sales compressors would follow access routes and be buried.

production scenario, many assumptions are necessary. These assumptions include location, productive capability, reservoir parameters, and hydrocarbon type and are based on information from representative oil and gas fields in Western Montana. Assumptions for both gas and oil fields are included here. **Table 1** lists the total number of wells (conventional and coal bed methane) forecast for the Butte Field Office.

It is assumed that 6 conventional oil and gas wells would prove to be productive. Additional step-out wells would be drilled. For production the access roads and rights of way would be stabilized by seeding the cut and fill slopes and surfacing the top of the road bed. A small portion of the road rights of way would be returned to a pre-disturbance condition. A major portion of the well pads (up to two thirds) would be rehabilitated. The gas/oil gathering lines would be constructed along existing or new access roads resulting in no additional disturbance. Gas trunk lines would be completely rehabilitated.

It is assumed that 30 coal bed methane wells (including the original discoveries and additional step-out wells) would prove to be productive. Access routes would be two track trails wherever possible requiring no reclamation. When constructed roads are required they will be built to the lowest standard appropriate and the right of way partially reclaimed for use during production. Pipelines would be constructed along existing or new access routes minimizing disturbance.

Table 3 displays the estimated amount of disturbance (in acres) expected from drilling and production activity predicted in the drilling activity forecast. It is based on the previously discussed assumptions and successful reclamation after construction operations are completed or oil and gas and coal bed methane operations cease.

Table 4, **Table 5**, and **Table 6** provide technical assumptions for oil and gas and coal bed natural gas activity in the Butte Field Office.

Table 3 - Direct Cumulative Surface Disturbance

	Unsuccessful Wildcat Wells		Productive Wells	
	Acres Disturbed Pre-Site Reclamation	Post-Site Reclamation	Acres Disturbed Pre-Site Reclamation	Post-Site Reclamation[1]
Conventional Oil and Gas Activity				
Well Sites	45.5	0	63	21.5 (2 years)
Access Roads	221	0	189.6	103.7 (2 years)
Pipelines	0	0	254.5	0 (2 years)
Coal Bed Natural Gas Activity				
Well Sites	1	0	7.5	5 (2 years)
Compressors, Pipelines, and Access Roads	3	0	220	147 (2 years)
TOTAL ACRES DISTURBED	270.5	0	734.6	277.2 (2 years)

[1] The figures in this column represent acres required for existing facilities after interim reclamation.

Table 4 - Gas Field Assumptions

- Gas fields would be discovered east of Lincoln (Area #2), northeast of Townsend (Area #3), east of Livingston (Area #4) and near Wilsall (where the Barrett Corporation is now drilling).
- Fields would be roughly 3 square miles in surface area except for the field developed near Wilsall where the Barrett Corporation is drilling which would be 6 square miles.
- Full development would require 3 wells (one discovery and two step-out wells) except for the field being tested by Barrett. That field would consist of 2 discoveries and 2 dry holes. The 2 discoveries would each have two step-out wells. 3-D seismic would be run to refine step out well locations.
- Gas would be transported by pipeline an order to be marketed. From Area #2 it would be transported west to a main north-south transmission line running through the Butte Field Office for approximately 18 miles. From Area #3 it would be transported approximately 30 miles to a main east-west transmission line running through the Butte Field Office. From Area #4 it would be transported approximately 6 miles north to a main east-west transmission line running through the Butte Field Office. From the area being explored by the Barrett Corporation it would be transported approximately 30 miles south to the main east-west transmission line running through the Butte Field Office.
- Compressor stations would be necessary along the pipeline route, with one of those stations being within one mile of the main line in order to boost the pipeline gas to the pressure of the main line.
- Wells would be drilled 10,000 to 15,000 feet deep. One well would be drilled from each well pad. Only one development well would be drilled at a time.
- Wells would take approximately 300 days to drill.
- Condensate, gas, and water separation would occur at the wellsites. Water disposal would be into a lined pit at the surface or water would be injected into the subsurface through a dry hole converted into a water disposal well. Condensate would be shipped by truck (1 truck every 4 days).
- The field is expected to produce for 25 years.
- Well servicing, repair, and maintenance would continue throughout the life of the field. Well servicing operations would take 5 days per well and occur 6 times /well of the 25 year life of the field. A well tender would make one trip per well per day.

Table 5 - Oil Field Assumptions

- An oil field is possible in the vicinity of Livingston.
- Field would be roughly 1 ½ square miles in surface area.
- Full field development would require 3 wells (one discovery and two step-out wells), 3-D seismic would be run to refine step out well locations.
- Oil would be transported by truck to the appropriate refining facility.
- Wells would be 2,500 to 3,500 feet deep. One well would be drilled from each well pad. Only one development well would be drilled at a time.
- The wells would take approximately 21 days to drill.
- Oil, gas, and water separation would occur at the well sites. Water disposal would be into a lined pit at the surface or water would be injected into the subsurface through a dry hole converted into a water disposal well. Gas would be used on lease to separate oil and water and to heat oil. Gas not used on lease would be sold or vented/flared to the atmosphere. If sufficient gas quantities are produced this gas may also be captured and sold. For this analysis all unused gas is assumed to be reinjected for pressure maintenance
- The field is expected to produce for 25 years.
- Well servicing, repair, and maintenance continue throughout the life of the field. Well servicing operations would take 5 days per well and occur 6 times/well over the 25 year life of the field. A well tender would make one trip per day.

Table 6 - Coal Bed Natural Gas Field Assumptions

- Two coalbed natural gas fields are expected in the area of Bozeman Pass within the Trail Creek-Livingston coal field.
- Each field would be approximately 1.75 square miles in surface area.
- Each field would require 1 field compressor and one may sales compressor may be needed depending on where the wells are located.
- Ten to 27 miles of plastic low-pressure gathering lines would be required. These would be laid in the travel routes and follow existing roads to field compressors. Two to four miles of low-pressure steel lines would be laid from the field compressors to the sales compressor.
- No more than 20 miles of sales lines would be laid to the main transmission line in the area.
- Total disturbance excluding the actual well sites including compressors, pipelines, and access routes would be 220 acres.

PROCEDURES IN OIL AND GAS RECOVERY AND OPERATIONS

GEOPHYSICAL OPERATIONS

Oil and gas reservoirs are discovered by either direct or indirect exploration methods. Direct methods include mapping of surface geology, observing oil or gas seeps, and gathering information on hydrocarbon shows observed in drilling wells. Indirect methods include various types of geophysical exploration such as seismic, gravity, and magnetic surveys, which use remote data gathering techniques to delineate subsurface structures or lithologic changes that are not directly observable, but that may contain or trap oil and gas. Data is often acquired using equipment mounted on surface vehicles or aircraft. Information from geophysical exploration can lead oil companies or others to request that lands be offered for lease, or assist in the selection of drill sites on existing leases. However, a federal oil and gas lease is not required in order to conduct geophysical operations. Existing road systems are used where available. Roads may be cleared of vegetation and loose rocks to improve access for trucks if the permit allows that action.

Blading and road construction for seismic operations are not usually allowed so that environmental impacts are minimized. In areas with rugged terrain or without access roads, and during certain seasons of the year, seismic work is conducted by helicopter rather than by ground vehicles. Other geophysical operations that do not cause additional surface disturbance include remote sensing, and gravity, and aeromagnetic surveying.

Geophysical Permitting Procedures and Regulations

Geophysical operations on and off an oil and gas lease are reviewed by the Federal Surface Management Agency (SMA), which can include the BLM, Bureau of Reclamation, or U.S. Forest Service (USFS). Close cooperation between the operator and the managing agency during geophysical operations minimizes surface impacts and protects other resources.

Notification Process

Geophysical operations on public lands are reviewed by the BLM. Geophysical exploration on public lands requires review and approval following the procedures in 43 CFR Subparts 3150, 3151, and 3154. In the Butte Field Office, the Field Manager is authorized to approve geophysical operations. The responsibilities of the geophysical operator and the Field Manager during geophysical operations are described below.

Geophysical Operator

The operator is required to file a Notice of Intent to Conduct Oil and Gas Exploration Operations (form 3150-4) for operations on public lands administered by the BLM. Maps (preferably 1:24,000 scale topographic maps) showing the location of the proposed lines, access routes and ancillary facilities must accompany the Notice of Intent. When the Notice of Intent is filed, the authorized officer may request a prework conference or field inspection. Special requirements or procedures that are identified by the authorized officer are included in the Terms and Conditions for Notice of Intent to Conduct Geophysical Exploration (form 3150-4 and a copy of the state requirements). Any changes in the original Notice of Intent must be submitted in writing to the authorized officer. Written approval must be secured before activities proceed.

Bonding of the operator is required. A copy of proof of satisfactory bonding shall accompany the Notice of Intent. Proper bonding may include a $5,000 individual, $25,000 statewide, or $50,000 nationwide geophysical exploration bond. In lieu of an exploration bond, a statewide or nationwide oil and gas bond may be used if it contains a rider for geophysical exploration. The operator is required to comply with applicable federal, state, and local laws such as Federal Land Policy and Management Act of 1976, the National Historic Preservation Act of 1966, and the Endangered Species Act of 1973, as amended. Earth-moving equipment shall not be used without prior approval. Operators may be required to submit an archeological evaluation and the agency provide NEPA documentation for cultural and wildlife resources if dirt work or other surface disturbance is contemplated, or if there is reason to believe that these resources may be adversely affected.

When geophysical operations have been completed including any required reclamation or rehabilitation, the operator is required to file a Notice of Completion (form 3150-5) including certification that all terms and conditions of the approved Notice of Intent have been fulfilled. The operator must also submit a map that shows the actual line location, access route, and other survey details.

BLM Field Manager (authorized officer)

The authorized officer is required to contact the operator within five working days after receiving the Notice of Intent to explain the terms of the notice, including the “Terms and Conditions for Notice of Intent to Conduct Geophysical Exploration,” current laws, and BLM-administrative requirements. At the time of the prework conference or field inspection, written instructions or orders are given to the operator. The authorized officer is responsible for the examination of resource values to determine appropriate surface protection and reclamation measures. Compliance inspections during the operation ensure that stipulations are followed. The authorized officer is required to make a final inspection following filing of the Notice of Completion. Compliance inspections upon completion of work ensure that required reclamation is properly completed. When reclamation is approved, obligation against the operator’s bond is released. The BLM has 30 days after receipt of the Notice of Completion to notify the operator whether the reclamation is satisfactory or if additional reclamation work is needed. Bonding liability will automatically terminate within 90 days after receipt of the Notice of Completion unless the authorized officer notifies the operator of the need for additional reclamation work.

State Standards

Geophysical operators register with the state through the County Clerk and Recorder’s office. State regulations include requirements for permitting geophysical activities such as shothole locations, drilling techniques, plugging techniques, bonding, and reclamation.

Mitigation

When a geophysical Notice of Intent is received, restrictions may be placed on the application to protect resource values or to mitigate impacts. Many of these requirements may be the same as the oil and gas lease stipulations adopted in the RMP. Other less restrictive measures may be used when impacts to resource values will be less severe. This is due in part to the temporary nature of geophysical exploration. Seasonal restrictions may be imposed to reduce conflicts with wildlife, watershed damage, and hunting activity. The decisions concerning the level of protection required are made on a case-by-case basis when a Notice of Intent is received.

LEASING PROCESS

Federal oil and gas leasing authority is found in the 1920 Mineral Leasing Act, as amended, for public lands and the 1947 Acquired Lands Leasing Act, as amended, for acquired lands. Leasing of federal oil and gas is affected by other acts such as National Environmental Policy Act of 1969, the Wilderness Act of 1964, National Historic Preservation Act of 1966, the Endangered Species Act of 1973, Federal Land Policy and Management Act of 1976, and the Federal Onshore Oil and Gas Leasing Reform Act of 1987. Regulations governing federal oil and gas leasing are contained in 43 CFR Part 3100 with additional requirements and clarification found in Onshore Operating Orders and Washington office manuals, handbooks and instruction memorandums.

The 1920 *Mineral Leasing Act* provides that all public lands are open to oil and gas leasing unless a specific order has been issued to close an area. Leasing procedures for oil, conventional gas, and coal bed natural gas are the same.

The lease grants the right to explore, extract, remove, and dispose of oil and gas deposits that may be found in the leased lands. The lessee may exercise the rights conveyed by the lease subject to the lease terms and attached stipulations, if any.

Lease rights may be subject to lease stipulations and permit approval requirements. Stipulations and permit requirements describe how lease rights are modified. Lease constraints or requirements may also be applied to applications for permit to drill on existing leases provided the constraints or requirements are within the authority reserved by the terms and conditions of the lease. The stipulations and conditions of approval must be in accordance with laws, regulations, and lease terms. The lease stipulations and permit conditions of approval allow for management of federal oil and gas resources in concert with other resources and land uses. The BLM planning process is the mechanism used to evaluate and determine where and how federal oil and gas resources will be made available for leasing. In areas where oil and gas development may conflict with other resources, the areas may be closed to leasing. Areas where oil and gas development could coexist with other land uses or resources will be open to leasing. Leases in these areas will be issued with standard lease terms or with added stipulations based upon decisions in the land use document. Added stipulations are a part of the lease only when environmental and planning records demonstrate the necessity for the stipulations (modifications of the lease).

Currently, leases are issued as either competitive leases or noncompetitive leases with 10-year terms. Competitive leases will be sold to the highest qualified bidder at oral auctions that are held at least quarterly. Tracts that receive no bid at the sale are available for the filing of noncompetitive offers for two years following the sale. All offers filed the day after the sale (referred to as day-after-the-sale filings) are considered simultaneously filed. This means that if there is more than one offer filed for a specific parcel the day after the sale, a drawing must be held to determine the priority on multiple offers. Noncompetitive offers filed after that time are on a first-come first-served basis. If there are no offers filed for a parcel for the two-year period after the sale, the lands must be nominated again for competitive leasing. Rental payments for these leases will be $1.50 per acre for the first 5 years and $2.00 per acre thereafter until production is established. If the lessee establishes hydrocarbon production, the leases can be held for as long as oil or gas is produced. The royalty rate for leases issued following the 1987 Oil and Gas Leasing Reform Act is 12-1/2 percent one-half of which is returned to the State of Montana on public domain lands (not acquired lands). Minimum royalty is the same amount as the rental. Future interest leases are available for entire or fractional mineral estates that have not reverted to federal ownership. These are minerals that are reserved by the grantor for a specific period of time in warranty deeds to the United States. Any future interest leases may be obtained only through the competitive bidding process and are made effective the date of vesting of the minerals with the United States.

Resource Management Plan Maintenance

New information may lead to changes in existing resource inventories. New use areas and resource locations may be identified or use areas and resource locations that are no longer valid may be identified. These resources usually cover small areas requiring the same protection or mitigation as identified in this plan. Identification of new areas or removal of old areas that no longer have those resource values will result in the use of the same lease stipulation identified in this plan. These areas will be added to the existing data inventory without a plan amendment. In cases where the changes constitute a change in resource allocation outside the scope of this plan, a plan amendment would be required.

Lease Stipulations

Certain resources in the planning area require protection from impacts associated with oil and gas activities. The specific resource and the method of protection are contained in lease stipulations. Lease stipulations are usually no surface occupancy, controlled surface use, or timing limitation. A notice may also be included with a lease to provide guidance regarding resources or land uses. While the actual wording of the stipulations may be adjusted at the time of leasing, the protection standards described will be maintained.

Controlled Surface Use

Use or occupancy is allowed (unless restricted by another stipulation), but identified resource values require special operational constraints that may modify the lease rights. Controlled surface use is used for operating guidance, not as a substitute for the no surface occupancy or timing stipulations.

No Surface Occupancy (NSO)

Use or occupancy of the land surface for fluid mineral exploration or development is prohibited in order to protect identified resource values. The no surface occupancy stipulation includes stipulations which may have been worded as No Surface Use and Occupancy," "No Surface Disturbance," "Conditional No Surface Occupancy," and "Surface Disturbance or Occupancy Restriction (by location)."

Timing Limitation (Seasonal Restriction)

Prohibits surface use during specified times to protect identified resource values. This stipulation does not apply to the operation and maintenance of production facilities unless the findings of analysis demonstrate the continued need for such mitigation and that less stringent, project-specific mitigation measures would be insufficient.

Waivers, Exceptions, Modifications

Lessees must honor lease stipulations when an Application for Permit to Drill or other surface disturbing operations are proposed to explore and develop a lease, unless the BLM grants a waiver, exception, or modification to a lease stipulation. This RMP establishes the guidelines by which future waivers, exceptions, or modifications are granted within the Butte Field Office. Substantial modification or waiver is subsequent to lease issuance is subject to public review for at least a 30-day period.

Exception: A case-by case exemption from a lease stipulation. The stipulation continues to apply to all other sites within the leasehold to which the restrictive criteria apply.

Modification: Fundamental changes to the provisions of a lease stipulation, either temporarily of for the term of the lease. Therefore, a modification may include an exemption from or alteration to a stipulated requirement. Depending on the specific modification, the stipulation may or may not apply to all other sites within the leasehold to which the restrictive criteria apply.

Waiver: Permanent exemption from a lease stipulation. The stipulation no longer applies anywhere within the leasehold.

PERMITTING

A federal lessee or operator is governed by procedures set forth in the Code of Federal Regulations at 43 CFR Part 3160, Onshore Oil and Gas Order No. 1, "Approval of Operations on Onshore Federal and Indian Oil I and Gas Leases," issued under 43 Code of Federal Regulations (CFR) 3164 and other orders and notices.

The lessee may conduct lease operations after lease issuance. However, proposed drilling and associated activities must be approved in advance before beginning operations. Therefore, before beginning construction or the drilling of a well, the lessee or operator must file an Application for Permit to Drill (APD) with the BLM Great Falls Oil and Gas Field Station. A copy of the application will be posted in the Field Station and Butte Field Office, and if applicable, in the office of the Surface Management Agency (SMA) for a minimum of 30 days for review by the public. After 30 days, the application can be approved in accordance with (a) lease stipulations, (b) Onshore Oil and Gas Orders, and (c) Onshore Oil and Gas regulations (43 CFR Part 3160) if it is administratively and technically complete.

Evidence of bond coverage for lease operations must be submitted with the application. Bond amount must not be less than a $10,000.00 lease bond, a $25,000.00 statewide bond or a $150,000.00 nationwide bond.

Pre-drill on-site inspections will be conducted for all wells. The inspection makes possible selection of the most feasible well site and access road from environmental, geological, and engineering points of view. The purpose of the field inspection is to evaluate the operator's plan, assess the situation for possible impacts, and to formulate resource protection stipulations. Surface use and reclamation requirements are developed during the on-site inspection that is usually conducted within 15 days after receipt of the Notice of Staking (NOS) or APD. For operations proposed on privately-owned surface, if the operator after a good-faith effort is unable to reach an agreement with the private surface owner, the operator must post a bond to cover loss of crops and damages to tangible improvements prior to approval of the APD.

Normally, site-specific mitigations in the form of conditions of approval are added to the APD for protection of surface and subsurface (including groundwater) resource values in the vicinity of the proposed activity. The BLM is responsible for preparing environmental documentation necessary to satisfy the National Environmental Policy Act (NEPA) requirements and provide any mitigation measures needed to protect the affected resource values.

Conditions of approval implement the lease stipulations and are part of the permit when environmental and field reviews demonstrate the necessity for operating constraints or requirements. A surface restoration plan is part of an approved permit, either an APD or Sundry Notice that includes other surface-disturbing activities. The authorized officer will act on the application in one of two ways:

Within 30 days after the operator has submitted a complete application including incorporating any changes that resulted from the onsite inspection the BLM will:

(1) approve the application subject to reasonable conditions of approval if the requirements of the National Environmental Policy Act (NEPA), National Historic Preservation Act (NHPA), Endangered Species Act (ESA), or other applicable law have been completed and, if on FS lands, FS has approved the Surface Use Plan of Operations; or

(2) notify the operator that it is deferring action on the permit. The notice of deferral must specify:

(a) any action the operator could take that would enable BLM to issue a final decision on the application, with FS concurrence if appropriate. Actions may include but are not limited to; assistance with data gathering or assistance with preparation of analyses and documents;

(b) and if necessary, a list of actions that BLM or the FS, if appropriate, need to take, including completing requirements of NEPA or other applicable law and a schedule for completing these actions.

The operator has 2 years from the date of the notice of deferral to take the action specified in the notice. If all analyses required by NEPA, NHPA, ESA and other applicable laws have been prepared, BLM and with FS concurrence, if appropriate, shall make a decision on the permit within 10 days of receiving a report from the operator addressing all of the issues or actions specified in the deferral notice and certifying that all required actions have been taken. If the operator has not completed the actions specified in the notice, BLM may deny the permit at any time later than 2 years from the operator's receipt of the deferral notice."

For drilling operations on lands with state or private mineral ownership, the lessee must meet the requirements of the mineral owner and the state regulatory agency. The BLM does not have jurisdiction over nonfederal minerals; however, the BLM has surface management responsibility in situations of BLM surface over nonfederal mineral ownership.

When final approval is given by the BLM, the operator may begin construction and drilling operations. Approval of an APD is valid for one year. If construction does not begin within one year, the permit must be reviewed prior to approving another APD.

A Sundry Notice is used to approve other surface and subsurface lease operations. When a well is no longer useful, the well is plugged and the surface reclaimed. A Sundry Notice is also used to approve well plugging and reclamation operations, although verbal approval for plugging may be given for a well that was drilled but not completed for production.

The period of bond liability is terminated after all wells covered by the bond are properly plugged and the surface reclaimed. The lands may then become available for future leasing.

APPLICATION FOR PERMIT TO DRILL

Applications for Permit to Drill are approved for the Butte Field Office by the supervisor of the Great Falls Oil and Gas Field Station. The approved APD includes Conditions of Approval, and Informational Notices that cite the regulatory requirements from the Code of Federal Regulations, Onshore Operating Orders and other guidance.

CONDITIONS OF APPROVAL

Conditions of approval are mitigation measures that implement restrictions in light of site-specific conditions. General guidance for conditions of approval and surface operating standards is found in the BLM and USFS brochure entitled "Surface Operating Standards for Oil and Gas Exploration and Development" (USDI, BLM1989c) and BLM Manual 9113 entitled "Roads". The BLM commonly applies best management practices when approving APDs. The sources of many of these may be found in RMP Appendix D at page 4.

The following mitigation measures may be applied to approved permits to drill as conditions of approval. The listing is not all-inclusive, but presents some possible conditions of approval that may be used in the planning area. The wording of the condition of approval may be modified or additional conditions of approval may be developed to address specific conditions.

In addition to the best management practices identified in Appendix D, the BLM will also develop site-specific practices on a case-by-case basis as needed.

Surface Conditions

a) The access road on the BLM surface will not be bladed unless prior BLM approval is obtained.

b) The operator will be responsible for weed control on the access road, well location, and pipeline for the life of the well.

c) The operator will clean the undercarriage of all rigs prior to entering onto the leasehold to reduce the chances for noxious weed infestations.

d) Topsoil is to be removed and stockpiled. Operator will be required to cover the topsoil pile to prevent the loss of topsoil to wind erosion. Operator must cover the topsoil with a biodegradable mesh fabric that allows water and air to circulate through the topsoil. Operator cannot cover the topsoil with any type of impermeable fabric. Operator will be responsible for weed control on the topsoil stockpile.

e) Avoid constructing reserve pits in natural watercourses or areas of shallow groundwater. Water courses include lake beds, gullies, draws, streambeds, washes, arroyos, or channels that are delineated on a 1:24,000 USGS quadrangle map or have a hydrologic connection to streams, rivers, or lakes. The reserve pit should normally be located entirely in cut material. The preferred method of reserve pit construction on steeply sloping sites is to locate the pit on the drill pad next to the high wall. The pits are constructed totally in cut at such locations. If this is not possible, at least 50 percent of the reserve pit should be constructed below original ground level to help prevent failure of the pit dike. Fill dikes should be properly compacted in lifts. The necessary degree of compaction depends on soil texture and moisture content. The pit should be designed to contain all anticipated drilling muds, cuttings, fracture fluids, and precipitation while maintaining at least 2 feet of freeboard. Pits improperly constructed on slopes or poor soil types may leak along the plane between the natural ground level and the fill. There is a significant potential for pit failure in these situations. When constructing dikes for pits or impoundments with fill embankment, a keyway or core trench should be excavated to a minimum depth of 2 to 3 feet below the original ground level. The core of the embankment can then be constructed with compacted, water-impervious material.

f) Containment structures sufficiently impervious to prevent a discharge to waters of the US, such as containment dikes, containment walls, drip pans, or equivalent protection actions are to be constructed and maintained around all qualifying bulk oil storage facilities, including tank batteries, consistent with the Environmental Protection Agency's Spill Prevention, Control, and Countermeasure (SPCC) regulation (40 CFR 112). The containment structure must have sufficient volume to contain, at a minimum, the content of the largest storage tank containing liquid hydrocarbons within the facility/battery and sufficient freeboard to contain precipitation, unless more stringent protective requirements are deemed necessary by the authorized officer. Containment dikes are not to be constructed with topsoil or coarse, insufficiently impervious spoil material. Containment is strongly suggested for produced water tanks. Chemicals should be placed within secondary containment and stored so that the containers are not in contact with soil or standing water and product and hazard labels are not exposed to weathering.

g) Rehabilitation of upland sites following disturbance would use the plant species listed in **Table 7** for seeding. The species used for rehabilitation would vary depending on the adjacent habitat conditions, site potential, soils, and precipitation. Species not in the following list could be added if site conditions warrant, species availability changes or if there are large acreages are involved.

h) All permanent structures will be painted the neutral color of Sand Beige (5Y 6/3), Desert Brown (10YR 6/3), Carlsbad Canyon (2.5Y 6/2) or Slate Gray (5Y 6/1) as displayed in the Standard Environmental Color chart (available at the BLM office) or other acceptable color approved by the authorized officer to blend in with the surrounding landscape.

i) If the well is a dry hole, Operator will be required to fence the entire disturbed area of the location to allow the seedlings and vegetation to re-establish. This fencing must be stock tight and must remain in place until the BLM requests otherwise.

j) The Operator will be responsible for control of noxious weeds occurring as a result of lease operations. The Surface Management Agency will be responsible for approval of weed control programs.

k) Prior to the use of herbicides on public land, the applicant will have to obtain from the BLM authorized officer written approval of a plan showing the type and quantity of material to be used, weed(s) to be controlled, method of application, location of storage and disposal of containers and any other pertinent information deemed necessary by the authorized officer. Operators must monitor disturbed areas annually from June through August for the presence of noxious weeds. Monitoring must begin prior to disturbance.

l) Within the Distribution Zone of grizzly bears, food storage regulations will be followed to minimize bear-human conflicts. Proper food storage is essential to successful human-bear management. "Food" includes actual food, trash, recyclables, toiletries, cosmetics, first aid kits, pet food, sunscreen, baby wipes, scented tissue, beverage cans and bottles, canned food, mosquito repellant, tobacco products, and any related items with a scent. All food items, garbage, beverages, coolers, stoves, grills, cooking utensils, food containers, and pet food not in immediate use (day or night) must stored in Bear Resistant Containers (BRC), stored in a closed vehicle constructed of solid, nonpliable material or be hung from food poles where provided or limbs of trees. Food items must be hung 10 feet clear of the ground at all points and 4 feet horizontally from any supporting tree or pole. Camps and job sites must be clean at all times. No garbage will be burned or buried. All garbage will be removed from the site.

Table 7
Rehabilitation Species List

Common Name	Scientific Name	4 Code	6 Code
12 to 14 inch precipitation zone			
Western Wheatgrass	*Pascopyrum smithii*	PASM	PASSMI
Bluebunch Wheatgrass	*Pseudoroegneria spicata*	PSSP6	PSESPI
Thickspike Wheatgrass	*Elymus macrourus*	ELMA7	ARGDAS
Slender Wheatgrass	*Elymus trachycaulus*	ELTR7	ELYTRA
Green Needlegrass	*Nassella viridula*	NAVI4	STIVIR
Needle And Thread	*Hesperostipa comata*	HECO26	STICOM
Blue Flax	*Linum perenne*	LIPE2	LINPER
Scarlet Globemallow	*Sphaeralcea coccinea*	SPCO	SPHCOC
Silky Lupine	*Lupinus sericeus*	LESE4	LUPSER
Wyoming Big Sage	*Artemisia tridentate*	ARTRW8	ARTTRIW
Woods' Rose	*Rosa woodsii*	ROWO	ROSWOO
15 to 19 inch precipitation zone			
Basin Wildrye	*Leymus cinereus*	LECI4	LEYCIN
Bluebunch Wheatgrass	*Pseudoroegneria spicata*	PSSP6	PSESPI
Slender Wheatgrass	*Elymus trachycaulus*	ELTR7	ELYTRA
Idaho Fescue	*Festuca idahoensis*	FEID	FESIDA
Sheep Fescue	*Festuca ovina*	FEOV	FESOVI
Sandberg Bluegrass	*Poa secunda*	POSE	POASEC
Blue Flax	*Linum perenne*	LIPE2	LINPER
Silky Lupine	*Lupinus sericeus*	DESE4	LUPSER
Wyoming Big Sage	*Artemisia tridentate*	ARTRV	ARTTRIV
Woods' Rose	*Rosa woodsii*	ROWO	ROSWOO

m) Operator road use activities on BLM lands must conform to existing travel plans.

Downhole Conditions

a) Surface casing shall have centralizers on each of the bottom three joints and shall be cemented back to surface.

b) BOP system shall be consistent with Onshore Oil and Gas Order No. 2, 2M system.

c) The operator shall obtain verbal approval prior to initiating side-tracking operations. At the time of approval, the operator must identify the proposed azimuth, kick-off point, inclination rate (angle build rate), and the estimated closure or horizontal length to be drilled. All wellbore paths, i.e. different orientations of bottom hole locations, require prior approval.

d) The operator shall have sufficient weighting materials and loss circulation materials on location in the event of a pressure kick or in the event of loss circulation.

Informational Notice

a) Approval of this APD does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease, which would entitle the applicant to conduct operations thereon.

b) The lessee shall comply with applicable laws and regulation; with the lease terms, Onshore Oil and Gas Orders; NTL's; and with other orders and instructions of the authorized officer.

c) A complete copy of the approved APD must be on the well site and available for reference during the construction and drilling phase.

d) Any deviation from the terms of this APD requires prior approval.

e) This drilling permit is valid for either 1 year from the approval date or until lease expiration, whichever occurs first.

f) Each drilling, producing, or abandoned well shall be identified with the operator's name, the lease serial number, the well number, and the surveyed description of the well (footages or the quarter section, the section, township, and range). All markings must be legible, and in a conspicuous place.

Notification Requirements

a) Notify this office at least 12 hours before beginning dirt work*.

b) Notify this office verbally at least 6 hours before the well is spudded.

c) Notify this office verbally at least 6 hours prior to running/cementing casing.

d) Notify this office verbally at least 6 hours prior to conducting BOP tests.

e) Notify this office at least 6 hours prior to plugging for verbal plugging orders.

f) BLM Representative – Great Falls Field Station Office Telephone No. (406) 791-7700:

g) After hours and weekend contacts are:

   i. Petroleum Engineer Technician
   ii. Petroleum Engineer
   iii. Environmental Specialist
   iv. Field Station Supervisor

Plugging Requirements

a) Prior approval for abandonment must be obtained. Initial approval for abandonment during drilling operations may be verbal but must be followed by written notification on Form 3160-5, in triplicate.

b) Upon completion of the approved plugging, the operator will cut the casing off four feet below reclaimed ground level and a ¼" x 12" x 12" plate (with a ⅛" weep hole) shall be welded onto a fitting to be screwed into a collar either welded or screwed to the production casing. **The standard aboveground dry hole marker is accordance with 43 CFR 3162.6(d) has been waived by the Great Falls Field Station**. Pits must be fenced until dry or pumped and then filled in and recontoured unless otherwise approved by the Field Station Supervisor.

c) The following minimum information shall be permanently placed on the plate: "Fed" or "Ind" as applicable; "Lease Number, Operator, Well Number, and Location by quarter/quarter, Section, Township, and Range."

Reports and Notifications

a) All submitted information not marked "CONFIDENTIAL INFORMATION" is subject to public disclosure in accordance with 43 CFR 3100.4.

b) Production Startup Notification is required not later than the 5th business day after any well begins production on which royalty is due anywhere on a lease site or allocated to a lease site, or resumes production in the case of a well which has been off production for more than 90 days, the operator shall notify the authorized officer by letter or sundry notice, Form 3160-5, or orally to be followed by a letter or sundry notice, of the date on which such production has begun or resumed.

Hazardous Materials

a) Operators and their contractors are to ensure all production, use, storage, transport, and disposal of hazardous materials resulting from the proposed project is in accordance with all applicable Federal, State and local laws, regulations and guidelines, existing or hereafter enacted or promulgated that effect the management of hazardous material, as defined in this paragraph. Hazardous material means any substance, pollutant, or contaminant listed as a hazardous substance under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, as amended, 42 USC 9601 et seq., and its regulations (found at 40 CFR 302). The definition of hazardous substances under CERCLA includes "hazardous waste" defined in the Resource Conservation and Recovery Act (RCRA) of 1976, as amended, 42 USC 6901 et seq., and its regulations. The term also includes any extremely hazardous substances defined by 40 CFR 355 and any nuclear or byproduct material defined by the Atomic Energy Act of 1954, as amended, 42 USC 2011 ET seq. The term does not include petroleum, including crude oil or any fraction thereof not otherwise listed or designated as a hazardous substance under CERCLA section 101 (14), 42 USC 9601 (14), or natural gas.

b) Only drilling mud, drilling fluids, cuttings, native soils, cementing materials and/or approved pit solidifying materials will be placed in the reserve or working pits.

c) Nonexempt wastes will not be mixed with exempt wastes.

Environmental Obligations and Disposal of Produced Water

a) The Operator is required to take all necessary steps to prevent any death of a migratory bird in pits or open vessels associated with the drilling, testing, completion, or production of this well. The death of any migratory bird found in such a pit or open vessel is a violation of the Migratory Bird Treaty Act and is considered a criminal act. Any deaths of migratory birds attributable to pits or open vessels associated with drilling, testing, completing, or production operations must be reported to this office and the United States Fish and Wildlife Service within 24 hours.

b) The BLM may require that the pit be designed or the open vessel be covered to deter the entry of birds in any facility associated with drilling, testing, completing, or production of this well. Fencing, screening, and netting of pits may be required as a means to deter bird entry. These conditions would most likely be imposed to prevent the entry of migratory birds if oil is left in pits or open vessels after the cessation of drilling or completion operations, if water disposal pits consistently receive oil, or if pits or open vessels are used repeatedly for emergency situations which result in the accumulation of oil.

c) Voluntary pit fencing, screening, and netting, or sealing vessels is encouraged thus avoiding potential instances that may result in the death of a migratory bird.

d) With BLM approval, water produced from newly completed wells may be temporarily disposed of into unlined pits for up to 90 days. During this initial period, application for the permanent disposal method must be made in accordance with Onshore Order No. 7.

Paleontological/Cultural Stipulations

Paleontological and archaeological field checks by BLM personnel or other authorized personnel will occur prior to disturbance as deemed appropriate by the BLM. A BLM-approved archaeologist or paleontologist will conduct monitoring during surface-disturbing activities. Paleontological or cultural resource sites will be avoided or mitigated as necessary prior to disturbance. Any cultural or paleontological resource discovered by an operator or any person working on his/her behalf will be reported immediately to the BLM, and all operations that may further disturb such resources will be suspended until written authorization to proceed is issued by the BLM authorizing officer. An evaluation of the discovery will be made by the BLM to determine appropriate actions to prevent the loss of significant resources.

CONSTRUCTION

Construction of the access road and the well site is necessary before drilling operations begin. The extent of surface disturbance necessary for construction depends on the terrain, depth of the well, drill rig size, circulating system, and safety standards.

The depth of the drill test determines the size of drill rig needed, and therefore, the size of the work area necessary, the need for all-weather roads, water requirements, and other needs. The terrain influences the construction problems and the amount of surface area to be disturbed. Reserve pit size may vary because of well depth, drill rig size, or circulating system.

Access roads to well sites in the planning area usually consist of running surfaces 14 to 24 feet wide that are ditched on one or both sides. Many of the roads constructed will follow existing roads or trails. New roads might be necessary because existing roads are not at an acceptable standard. For example, a road may be too steep so that realignment is necessary.

Roads can be permanent or temporary, depending on the success of the well. The initial construction can be for a temporary road; however, it is designed so that it can become permanent if the well produces. Not all temporary roads constructed are immediately rehabilitated when the drilling stops. A temporary road is often used as access to other drill sites. The main roads and temporary roads require graveling to be maintained as all-weather roads. This is especially important in the spring. Access roads may be required to cross public lands to a well site located on private or state lands. The portion of the access road on public land would require a BLM right-of-way.

The amount of level surface required for safely assembling and operating a drilling rig varies with the type of rig, but averages 300 feet by 400 feet. Approximately 3-1/2 acres would be impacted by well site construction. The area is cleared of large vegetation, boulders, or debris. Then the topsoil is removed and saved for reclamation. A level area is then constructed for the well site, which includes the reserve pit.

Bulldozers and motor scrapers are typically used to construct the well pad. The well pad is flat (to accommodate the drill rig and support equipment) and large enough to store all the equipment and supplies without restricting safe work areas. The drill rig must be placed on "cut" material rather than on "fill" material to provide a stable foundation for the rig. The degree of cutting and filling depends on terrain; that is, the flatter the site, the less dirt work is required.

Hillside locations are common, and the amount of dirt work varies with the steepness. A typical well pad will require a cut 10 feet deep against the hill and a fill 8 feet high on the outside. It is normal to have more cut than fill to allow for compaction, and any excess material is then stockpiled. Eventually, when the well is plugged and abandoned, excavated material is put back in its original place.

Reserve pits are normally constructed on the well pad. Usually the reserve pit is excavated in "cut" material on the well pad. The reserve pit is designed to hold water, drill cuttings, and used drilling fluids. Generally, reserve pits are rectangular in shape and 8 to 12 feet deep, however, the size and number of pits depends on the depth of the well, circulating system and anticipated down hole problems, such as excess water flows. The reserve pit can be lined with a synthetic liner to contain pit contents and reduce pit seepage. Not all reserve pits are lined; however, BLM can require a synthetic liner based upon factors such as soils, pit locations, ground water, and drilling mud constituents. The operator can elect to line the reserve pit without that requirement. Pits may be divided into compartments separated by berms for the proper management of derived waste (e.g., drill cuttings, mud, water flows).

An adequate supply of water is required for drilling operations and other uses. During drilling operations, water is continually transported to the rig location. Approximately 1,680,000 gallons of water are required to drill an oil or gas well to the depth of 9,000 feet. The sources of water can be a water well at the drill site or remote sources such as streams, ponds, or wells. The water is transported to the site by truck or pipeline. Pipelines are normally small diameter surface lines. The operator must file for and obtain all necessary permits for water from the state of Montana. On public lands, an operator must have the BLM's permission before surface water can be used.

DRILLING OPERATIONS

Starting to drill is called "spudding in" the well. Initially, drilling proceeds rapidly due to the presence of unconsolidated or shallow, poorly consolidated rock formations. Drilling is accomplished by rotating special bits under pressure at the end of drill pipe (string) extended down the hole as it advances. While drilling, the rig derrick and associated hoisting equipment bear most of the drill pipe (string) weight. The weight on the bit is generally a small fraction of the total drill string weight. The combination of rotary motion and weight on the bit causes rock to be chipped away at the bottom of the hole.

Drilling fluid or mud is circulated through the drill pipe to the bottom of the hole, through the bit, up the bore of the well, and finally to the surface. When the mud emerges from the hole, it goes through equipment used to screen and remove rock chips and sand-size solids. When the solids have been removed, the mud is placed into holding tanks and from the tanks it is pumped back into the well. The mud is maintained at a specific weight and viscosity to cool the bit, seal off any porous zones (protect aquifers or prevent damage to producing zone productivity), subsurface pressure control, lubrication of the drill string, clean the bottom of the hole, and bring the rock chips to the surface.

There are three common types of drilling fluids: water-based, oil-based, and synthetic. Water-based muds are the most common and are largely made up of water and bentonite, clay that has special properties used to maintain proper viscosity and other properties over a wide range of drilling conditions. Oil-based mud is used for subsurface conditions where water may react with shale and cause caving and sloughing of the sides of the well bore. Synthetic drilling fluids are used for special conditions and have become more common in recent years. They are composed of organic polymers or other chemicals and are often designed to be environmentally benign. Additives are used to maintain the drilling mud properties for specific conditions that may be encountered during drilling.

As drilling progresses for a vertical well, pipe or casing is placed as a liner in the hole. Casing consists of steel pipe that is placed into the hole to prevent the collapse of the hole, to protect aquifers, and to isolate producing zones from other formations. Several strings of casing, that have different purposes, may be placed into the well. The first string of pipe is the conductor pipe, which stabilizes the hole near the surface. The second string of pipe placed in the hole is for surface casing, which is set deep enough to reach a competent rock below the deepest usable freshwater aquifer.

The surface casing is set and cemented in the hole by pumping cement between the casing and the well bore wall. Surface casing acts as a safety device to protect freshwater zones from drilling fluid contamination. To prevent the well from "blowing-out" in the event the drill bit hits a high-pressure zone, blowout preventers are mounted on top of the surface casing. If high-pressure zones are encountered that cannot be controlled with weighting using mud additives (drilling fluids are the first line of defense against a blowout), the blowout preventers can be closed through a system of hydraulically activated valves and manifolds to effectively seal the well and prevent the uncontrolled flow of fluids.

After the surface casing is set, a smaller drill bit that fits inside the surface casing is installed and drilling resumes. Depending on well conditions, additional strings of casing called intermediate casing may be installed and cemented into place. Conditions resulting in the need for intermediate casing include freshwater zones and sloughing formation zones. Casing prevents the flow of freshwater into the wellbore, and conversely prevents drilling fluids from infiltrating porous formations with low internal pressures. Casing also prevents mixing of waters from different formations (interformational mixing) where water within the formations is of differing quality.

All cementing operation plans are reviewed to assure cement is placed at the appropriate depths and a sufficient quantity is utilized to effectively seal all freshwater-bearing formations from contamination by interformational mixing or migration of fluids.

Drilling operations are continuous, 24 hours a day, 7 days a week. There are three 8-hour or two 12- hour shifts a day. Pickups or cars are used for workers' transportation to and from the location.

If no oil or gas is encountered, the well is called a "dry hole" and it is plugged with cement and abandoned in accordance with state and federal requirements. The drill site and access roads are rehabilitated according to stipulations and conditions attached to the approved APD and the drilling equipment is moved to another location.

If the well is a producer, casing is set and cemented in place.

Directional drilling may be used where the drill site cannot be located directly over the drilling target. There are limits to both the degree that the well bore can be deviated from the vertical and the horizontal distance the well can be drilled away from the well site.

Horizontal wells are drilled similarly to directional wells, except that the bottomhole location of the well is not a single point, but rather a lateral horizontal section. They are drilled to increase the recovery oil and gas reserves from vertically fractured reservoirs, or reservoirs with directional permeability.

ENVIRONMENT AND SAFETY

During drilling and production operations for any well the BLM will enforce the provisions of the regulations, Onshore Oil and Gas Operating Orders, and Notice to Lessees NTL-MSO-1-92, Report of Undesirable Events, to ensure operations are carried in a manner that protects the mineral resources, other natural resources, and environmental quality. Regulations at 43 CFR § 3162.5 require that the operator exercise due care and diligence to assure that leasehold operations do not result in undue damage to surface or subsurface resources or surface improvements. All produced water must be disposed of by methods approved by the BLM. Upon completion of operations the operator shall reclaim the surface in a manner approved of by the BLM. All spills or leakages of oil, gas, produced water, toxic liquids, blowouts, fires, personal injuries, and fatalities must be reported by the operator. The operator is required to exercise care in taking measures approved by the BLM to control and remove pollutants and extinguish fires. An operator's compliance with the regulations at 43 CFR § 3162.5 does not relieve him of the obligation to comply with any other law or regulations. Finally, the regulations authorize the BLM to require an operator to file a contingency plan describing procedures to be implemented to protect life, property, and the environment.

PRODUCTION AND DEVELOPMENT

Production

Production begins when a well yields oil or gas in commercial quantities. If formation pressure is sufficient to raise oil to the surface, the well is completed as a flowing well. A pumping unit is installed if the formation pressure is not sufficient to bring the oil to the surface.

When the well is completed as a free-flowing well, an assembly of valves and special connections known as a "Christmas tree" (so called because of its many branch-like fittings) is installed on top of the casing to regulate the flow of the well. Later, when the natural pressure declines, the Christmas tree can give way to a simple wellhead arrangement of valves and a pumping unit to lift the oil artificially. Many pumping units are "beam" style pumps that are powered by electric motors or gasoline engines. Most gas wells produce by natural flow and do not require pumping. Surface facilities at a flowing well are usually in a small area containing a gas well Christmas tree, a dehydrator, a produced water pit, and a meter house. Separators, condensate tanks, and compressors may be included. Some gas wells require continuous water pumping as water entering the well chokes off the gas flow.

Development

New field development may be analyzed under NEPA by means of an environmental assessment (EA) or environmental impact statement (EIS) usually after the second or third confirmation well is drilled. The operator should then have an idea of the extent of drilling and disturbance required to extract and produce the oil and gas. When an oil or gas discovery is made, a well spacing pattern must be established before development drilling begins.

Development can take years and include from one or two wells to more than a hundred wells per field. However, the reasonably foreseeable development scenario for this planning document should only forecasts two additional wells per field. Roads to producing wells are upgraded to all-weather roads as necessary. Pipelines, electrical transmission lines, separators, dehydrators, sump pits, and compressor stations soon follow. Sometimes oil and gas processing facilities are built in or adjacent to the field.

Further Seismic Testing

More detailed seismic work can be done to achieve better definition of the petroleum reservoir. Diagonal seismic lines can be required to tie the previous seismic work to the discovery well. The discovery well can be used to conduct studies to correct the previous seismic work and provide more accurate subsurface data.

Spacing Requirements

A well spacing pattern must be established before development drilling begins. Information considered in establishment of a spacing pattern includes data from the discovery well on porosity, permeability, pressure, composition, and depth of formations in the reservoir; well production rates and type (predominantly oil or gas); and the economic effect of the proposed spacing on recovery. The state of Montana establishes well spacing patterns for both exploratory and development wells which the BLM generally adopts. The state specifies the minimum distance from lease lines or government survey lines for the bottom hole location of the well bore depending upon depth of the well. The spacing regulations determine the acres assigned to each well. Spacing unit size is established to provide for the most efficient and economic recovery of oil or gas from a reservoir. Normal well spacing ranges from 40 acres to 640 acres (**Figures A-2 and A-3**). Wells deeper than 11,000 feet can be no closer than 1,650 feet to other producing wells below 11,000 feet. Only one producing well per formation is allowed in each 40, 80, 160, 320, and 640-acre unit.

Drilling of Development Wells

The procedures used in drilling development wells are the same as those used for wildcat wells, but usually with less subsurface sampling, testing, and evaluation. The rate at which development wells are drilled in a field depends on factors such as whether the field is developed on a lease basis or unitized basis, the probability of profitable production, the availability of drilling equipment, lease requirements, and the degree to which limits of the field are known. Some fields go through several development phases, the first resulting from the original discovery and others from later discovery. A field can be considered fully developed and produce for several years, and then a well may be drilled to a deeper or shallower pay zone. Discovery of a new pay zone in an existing field is a "pool" discovery (as distinguished from a new field discovery). A pool discovery may lead to the drilling of additional wells, often from the same drilling pad as existing wells.

Inspections

Geophysical operations and lease operations are inspected to determine compliance with approved permits, to resolve conflicts or correct problems and to determine effectiveness and need of lease stipulations. All inspections are documented. Operators are required to correct problems or violations.

Surface Requirements

Field development activities that cause surface disturbance include access roads, well sites, production facility sites, flow line and utility line routes and waste disposal sites. Surface uses in a gas field will be less than in an oil field, because gas wells are usually drilled on larger spacing units. The spacing pattern of 640 acres per well, which is common in gas fields, will require only one well per section and might require only 1/2 mile of access roads and pipelines. Production facilities include separation and storage equipment. Separation equipment is required when production includes a combination of oil, gas, or water and storage equipment is required for holding liquids prior to sales.

Flow Lines

Oil and gas are transferred from the well to storage facilities through small diameter (<6 inches) flow lines. Flow lines can be on the surface, buried or elevated. Produced water, gas, or polymerized liquid is transferred from storage facilities to injection wells for secondary recovery.

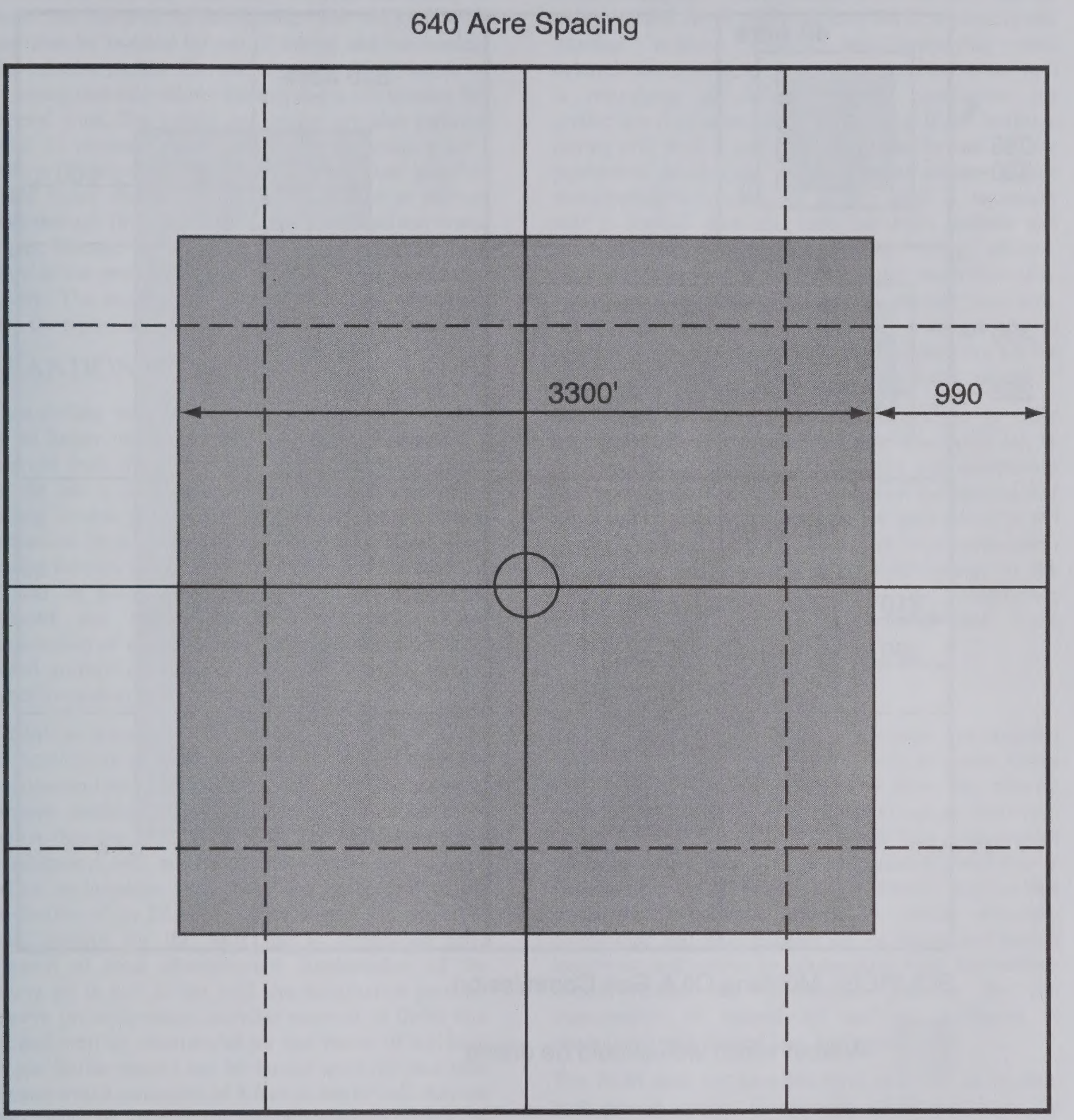
Separating, Treating, and Storage

Any water or gas associated with produced oil is separated from the oil before it is placed in storage tanks. The treating facilities are located at a storage tank battery. Low-pressure petroleum that must be pumped from the well is treated in a single separation. High-pressure, flowing petroleum can require several stages or separation, with a pressure reduction accompanying each stage.

Produced gas is sold when there is sufficient volume, necessary transportation, a market, and it is economical. Generally, if the volume of produced gas is too low for sales, it is used as fuel for well pump engines and heating fuel for the treaters. If the volume of produced gas exceeds fuel requirements on the lease but gas sales are not possible, the gas can be flared or vented into the atmosphere when authorized by permit in accordance with state and federal regulations. When water is produced with the hydrocarbons, it is separated before the gas is removed. In primary operations, where natural pressures or gravity causes the petroleum in the reservoir to flow to the wellbores, the degree of mixing is high enough to require chemical and heat treatment to separate the oil and water. In secondary production, where water injection or other methods are used to force additional petroleum to the wellbore, the oil and water often are not highly emulsified. In this case, the oil and water can be separated by gravity in a tall settling tank. Produced water can be disposed of by injection into the subsurface, surface evaporation or beneficial purposes such as water for livestock or irrigation.

Produced water from oil and gas operations is normally disposed of by subsurface injection or in surface pits. Regardless of the method of disposal, it must be acceptable to the BLM, in accordance with the requirements of Onshore Oil and Gas Order No. 7, titled "Disposal of Produced Water." Disposal of produced water by injection wells requires permits from the Montana Board of Oil and Gas Conservation. When produced water is disposed underground, it is introduced or injected under pressure into a subsurface horizon containing water of equal or poorer quality. Produced water may be injected into the producing zone from which it originated to stimulate oil production. Dry holes or depleted wells are commonly converted for saltwater disposal and occasionally new wells are drilled for this purpose. The law and regulations require that all injection wells be permitted under the Underground Injection Control program.

Figure A-2. Gas Well Spacing

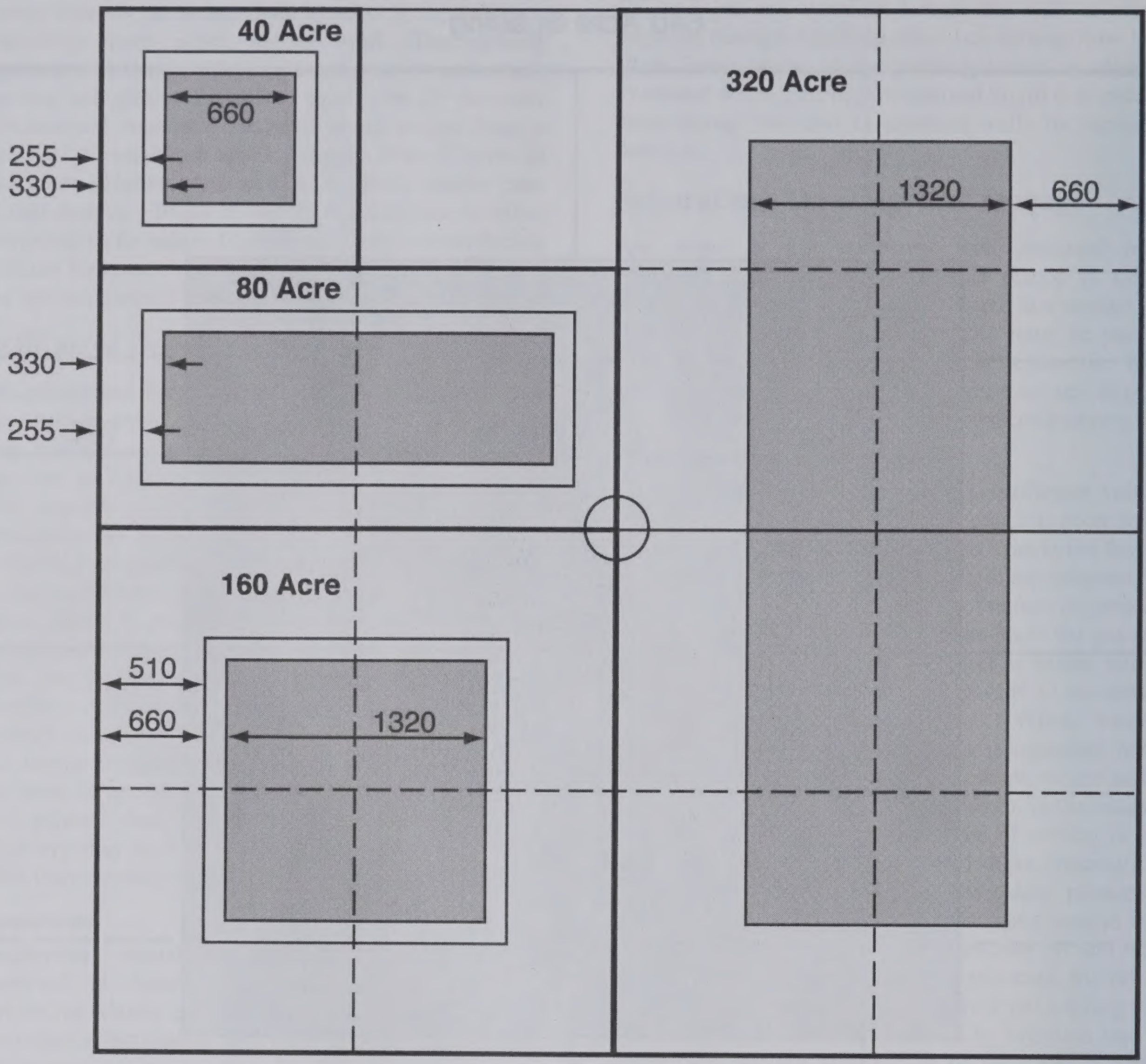

640 Acre Spacing
3300'
990

SOURCE: Montana Oil & Gas Commission

▨ Area in which well should be drilled

Well Depth (feet)	Minimum Well Distance (feet)
0>	990

Figure A-3. Oil Well Spacing


40 Acre
660
255
330
80 Acre
330
255
160 Acre
510
660
1320
320 Acre
1320
660

SOURCE: Montana Oil & Gas Commission

▨ Area in which well should be drilled

Well Depth (feet)	Spacing (acre)	Nearest Boundary (feet)	Topographic Tolerance (feet)	Minimum Well Distance (feet)
0-6,000	40 & 80	330	75	255
6,000 - 11,000	160	660	150	510
11,001 - >	320	660	none	none

For the 320 acre spacing (1,650 well tolerance) and the 80 acre spacing the drilling unit will be delineated either N-S or E-W

Under the Underground Injection Control approval process, the disposal well must be pressure tested to ensure the integrity of the casing. The disposal zone must also be isolated by use of tubing and mechanical plug called a packer. The packer seals off the inside of the casing and only allows the injected water to enter the disposal zone. The tubing and packer are also pressure tested to ensure their integrity. These pressure tests confirm isolation of the disposal zone from possible usable water zones. The oil is transported to storage tanks through flow lines after separation from any water or gas. Storage tanks are usually located on the lease either at the producing well or at a central production facility. The number and size of tanks are dependent upon the type and amount of production on the lease.

ABANDONMENT

When drilling wells are unsuccessful or production wells are no longer useful, the well is plugged, equipment is removed from the well site or production facility site, and the site is abandoned. The well bore is secured by placing cement plugs to isolate hydrocarbon-producing formations from contaminating other mineral or water bearing formations. The site and roads are then restored as near as possible to original contours. Topsoil is replaced and the recontoured areas are seeded. Reclamation of access roads and well sites on privately owned surface is completed according to the surface owner's requirements.

Rehabilitation requirements generally are made a part of the Application for Permit to Drill. Upon completion of abandonment and rehabilitation operations, the lessee or operator notifies the Great Falls Oil and Gas Field Station that the location is ready for inspection. Final abandonment will not be approved until the required surface reclamation work has been completed to the satisfaction of the BLM or surface owner. The period of bond liability for the well site is terminated after approval of final abandonment. Reclamation of the reserve pit is part of the well site reclamation process. Reserve pit reclamation includes removal of fluids to a disposal well or commercial pit and burial of solids in the pit. Solids should not be buried until dry and then covered with a minimum of 6 feet of native soil. Any pit liner may be buried in place. Methods such as solidification or dewatering may be used to help dry the solids.

REGULATIONS, LAWS, AND SPECIAL PROCEDURES

UNIT AND COMMUNITIZATION AGREEMENTS

Unit and communitization agreements can be formed in the interest of conservation and to allow for the orderly development of oil and gas reserves. A unit agreement provides for the recovery of oil and gas from the lands as a single consolidated entity without regard to separate lease ownerships. An exploratory unit is used for the discovery and development of the field in an orderly and efficient manner. Paying and nonpaying well determinations are made for each well drilled. If the well is nonpaying as defined by the agreement, the production is allocated on a lease basis. If the well is a paying unit well, a participating area is formed and the production is allocated to all interest owners in the participating area based on surface area. A secondary unit is formed after the field has been defined and enhanced recovery techniques are being utilized. Secondary recovery techniques include water injection, natural gas injection, or carbon dioxide injection. Injection is initiated to maintain the reservoir pressure to maintain oil production. The agreement provides for the allocation of production among all the interest owners.

A communitization agreement combines two or more leases (federal, state, or fee) that otherwise could not be independently developed in conformity with established well spacing patterns. The leases within the spacing unit share in the costs and benefits of the well drilled in the spacing unit. Therefore, unit and communitization agreements can lessen the amount of damage to the environment and save dollars by eliminating unnecessary wells, roads, pipelines, and lease equipment.

SPLIT ESTATE

Part of the area included in the planning area contains lands known as split estate lands. These are lands where the surface ownership is different from the mineral ownership. Management of federal oil and gas resources on these lands is somewhat different from management on lands where both surface and mineral ownership is federal. On split estate lands where the surface ownership is private, the BLM places necessary restrictions and requirements on its leases and permit approvals and works in cooperation with the surface owner. BLM has established policies for the management of federal oil and gas resources in accordance with federal laws and regulations.

The BLM does not have the legal authority to regulate how private surface is managed. BLM does have the statutory authority to require measures by lessees to avoid or minimize adverse impacts that may result from federally authorized mineral lease activities. These measures, in the form of lease stipulations or permit conditions of approval, are intended to protect or preserve the privately owned resources and prevent adverse impacts to adjoining lands, not to dictate management to the surface owner. The term split estate can also refer to lands where the surface ownership is federal and the mineral ownership is private. In this situation, BLM is the surface owner, and works in cooperation with the proponent and the state regulatory agency that approves private mineral applications. BLM has responsibilities in this situation under the previously mentioned statutes; however, BLM does not have the authority to approve or disapprove the mineral owner's actions. The mineral estate owner usually has the right to enter the land and use the surface that is necessary and reasonable for mineral development through either a reserved or an outstanding right contained in the deed.

ALTERNATIVE A OIL AND GAS STIPULATIONS

RESOURCE: GRIZZLY BEAR – RECOVERY ZONE

Stipulation: Controlled Surface Use. Activities may be relocated, require special design, or require on and off site mitigation measures to prevent impacts to grizzly bear populations and habitat located in the grizzly bear recovery zone.

Objective: 1) To ensure that proposed activities do not adversely affect the viability of grizzly bear, operations will be designed, including limiting noise levels and /or located so as to not adversely affect the viability of grizzly bear. 2) To restrict the timing or type of activities on roads, if needed to control human-animal conflicts or disturbances. 3) To require coordination of timing and timing adjustments of activities within grizzly bear recovery zones to avoid or minimize the potential for adverse effects to grizzly bear because of cumulative impacts from oil and gas activities, plus other activities within the area. This stipulation may limit the extent of field development.

Exception: An exemption may be granted if the operator demonstrates in a plan of operations that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: None.

Waiver: A waiver may be granted if new habitat studies in coordination with MFWP and the USFWS conclude that the area affected by this stipulation is not in grizzly bear occupied habitat.

RESOURCE: GRIZZLY BEAR DISTRIBUTION ZONE

Stipulation: Controlled Surface Use. Activities may be relocated, require special design, or require on and off site mitigation measures to prevent impacts to grizzly bear populations and habitat located in the grizzly bear distribution zone.

Objective: 1) To ensure that proposed activities do not adversely affect the viability of grizzly bear, operations will be designed, including limiting noise levels and /or located so as to not adversely affect the viability of grizzly bear. 2) To restrict the timing or type of activities on roads, if needed to control human-animal conflicts or disturbances. 3) To require coordination of timing and timing adjustments of activities within grizzly bear distribution zones to avoid or minimize the potential for adverse effects to grizzly bear because of cumulative impacts from oil and gas activities, plus other activities within the area. This stipulation may limit the extent of field development.

Exception: An exemption may be granted if the operator demonstrates in a plan of operations that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: None.

Waiver: A waiver may be granted if new habitat studies in coordination with MFWP and the USFWS conclude that the area affected by this stipulation is not in grizzly bear occupied habitat.

RESOURCE: GRAY WOLF – FORMER NORTHWEST MONTANA RECOVERY AREA ENDANGERED POPULATION

Stipulation: Controlled Surface Use. Activities may be relocated, require special design, or require on and off site mitigation measures to prevent impacts to gray wolf populations and habitat located in the gray wolf former Northwest Montana Recovery Area.

Objective: 1) To ensure that proposed activities do not adversely affect the viability of gray wolf, operations will be designed, including limiting noise levels and /or located so as to not adversely affect the viability of gray wolf. 2) To restrict the timing or type of activities on roads, if needed to control human-animal conflicts or disturbances. 3) To require coordination of timing and timing adjustments of activities within the gray wolf former Northwest Montana Recovery Area to avoid or minimize the potential for adverse effects to gray wolf because of cumulative impacts from oil and gas activities, plus other activities within the area. This stipulation may limit the extent of field development.

Exception: An exemption may be granted if the operator demonstrates in a plan of operations that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: None.

Waiver: A waiver may be granted if new habitat studies in coordination with MFWP and the USFWS conclude that the area affected by this stipulation is not in gray wolf occupied habitat.

RESOURCE: PRAIRIE DOG TOWNS

Stipulation: No Surface Occupancy. Activity is prohibited within the boundary of any prairie dog town or within ¼ mile of prairie dog towns.

Objective: To protect habitat for prairie dog towns.

Exception: An exception to this stipulation may be granted by the authorized officer if the operator submits a plan which demonstrates that impacts from the proposed action are minimal or can be adequately mitigated.

Modification: The boundaries of the stipulated area may be modified if the authorized officer determines that portions of the area can be occupied without adversely affecting prairie dogs.

Waiver: This stipulation may be waived if the authorized officer, in consultation with MFWP and USFWS, determines that the entire leasehold no longer contains prairie dogs.

RESOURCE: SAGE GROUSE WINTER/SPRING RANGE

Stipulation: Timing Limitation. No activity from December 1 through May 15. This stipulation does not apply to the operation and maintenance of production facilities unless the findings of analysis demonstrate the continued need for such mitigation and that less stringent, project-specific mitigation measures would be insufficient.

Objective: To protect sage grouse winter range from disturbance during the winter/spring season, and to facilitate long-term maintenance of wildlife populations.

Exception: An exception to this stipulation may be granted by the authorized officer in consultation with Montana Fish, Wildlife and Parks (MFWP) and the U.S. Fish and Wildlife Service (USFWS), if the operator submits a plan that demonstrates that impacts from the proposed action are minimal or can be adequately mitigated.

Modification: The boundaries of the stipulated area may be modified if the authorized officer determines that portions of the area no longer contain sage grouse winter/spring range. The dates for the timing restriction may be modified if new information indicates that the December 1 through May 15 dates are not valid for the leasehold.

Waiver: This stipulation may be waived if the authorized officer determines that the entire leasehold no longer contains sage grouse winter/spring range, or if in coordination with MFWP and the USFWS, determines that the area is not critical for sage grouse.

RESOURCE: SAGE GROUSE STRUTTING GROUNDS (LEKS)

Stipulation: No Surface Occupancy. Activity is prohibited within 500' of sage grouse leks.

Objective: To protect sage grouse strutting grounds and leks to maintain regional sage grouse populations.

Exception: An exception to this stipulation may be granted by the authorized officer if the operator submits a plan which demonstrates that impacts from the proposed action are minimal or can be adequately mitigated.

Modification: The boundaries of the stipulated area may be modified if the authorized officer determines that portions of the area can be occupied without adversely affecting sage grouse leks.

Waiver: The stipulation may be waived if the authorized officer, in consultation with MFWP and the USFWS, determines that the entire leasehold can be occupied without adversely affecting sage grouse leks.

RESOURCE: SAGE GROUSE BREEDING HABITAT

Stipulation: Timing Limitation. Activity is restricted from March 1 through June 30 in nesting and early brood rearing habitat (defined as within ¼ mile of leks).

This stipulation does not apply to the operation and maintenance of production facilities unless the findings of analysis demonstrate the continued need for such mitigation and that less stringent, project-specific mitigation measures would be insufficient.

Objective: To protect sage grouse leks and breeding habitat necessary for long-term maintenance of regional sage grouse populations.

Exception: An exception to this stipulation may be granted by the authorized officer if the operator submits a plan that demonstrates that impacts from the proposed action are minimal or can be adequately mitigated.

Modification: The boundaries of the stipulated area may be modified if the authorized officer determines that portions of the area can be occupied without adversely affecting sage grouse leks.

Waiver: This stipulation may be waived if the authorized officer, in consultation with MFWP and the USFWS, determines that the entire leasehold can be occupied without adversely affecting sage grouse leks or the surrounding breeding habitat.

RESOURCE: WILDLIFE MANAGEMENT AREAS

Stipulation: No Lease within the core area. The core area is considered to be any area approximately one mile or more inside the boundary. No Surface Occupancy is permitted in the perimeter area of the game ranges administered by MFWP. The perimeter area constitutes the area between the boundary of the game range extending approximately one mile into the interior of the game range.

Objective: To protect MFWP elk winter range necessary for long-term maintenance of regional elk populations and other wildlife values.

Exception: An exception to this stipulation may be granted by the authorized officer if, in coordination with MFWP, it is determined that portions of the game range can be occupied without adversely affecting elk winter range use or other wildlife values.

Modification: The boundaries of the stipulated area may be modified if the authorized officer, in coordination with MFWP determines that portions of the game range can be occupied without adversely affecting elk winter range use or other wildlife values.

Waiver: None.

RESOURCE: BIG GAME WINTER/SPRING RANGE

Stipulation: Timing Limitation. No activity from December 1 through May 15 within winter range for wildlife. This stipulation does not apply to the operation and maintenance of production facilities unless the findings of analysis demonstrate the continued need for such mitigation and that less stringent, project-specific mitigation measures would be insufficient.

Objective: To protect mule deer, elk, antelope, and moose winter/spring range from disturbance during the winter/ spring season, and to facilitate long-term maintenance of wildlife populations.

Exception: An exception to this stipulation may be granted by the authorized officer in consultation with MFWP, if the operator submits a plan that demonstrates that impacts from the proposed action are minimal or can be adequately mitigated.

Modification: The boundaries of the stipulated area may be modified if the authorized officer, in consultation with MFWP, determines that portions of the area no longer contain wildlife winter/spring range. The dates for the timing restriction may be modified if new wildlife use information indicates that the December 1 through May 15 dates are not valid for the leasehold.

Waiver: This stipulation may be waived if the authorized officer, in consultation with MFWP, determines that the entire leasehold no longer contains winter/spring range for wildlife.

RESOURCE: ELK CALVING/BIG GAME BIRTHING AREAS

Stipulation: Timing Limitation. Activity is prohibited from May 1 through June 30 in big game birthing areas. This stipulation does not apply to the operation and maintenance of production facilities unless the findings of analysis demonstrate the continued need for such mitigation and that less stringent, project-specific mitigation measures would be insufficient.

Objective: To protect mule deer, elk, antelope, and moose birthing areas from disturbance and facilitate long-term maintenance of wildlife populations.

Exception: An exception to this stipulation may be granted by the authorized officer if the operator submits a plan that demonstrates that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The boundaries of the stipulated area may be modified if the authorized officer determines that portions of the area no longer contains birthing habitat for big game species. The dates for the timing restriction may be modified if new wildlife use information indicates that the dates are not valid for the leasehold.

Waiver: This stipulation may be waived if the authorized officer, in consultation with MFWP, determines that the entire leasehold no longer contains big game birthing areas.

RESOURCE: BIGHORN SHEEP YEARLONG RANGE

Stipulation: Timing Limitation. Activity is prohibited from December 1 through May 15 in bighorn rutting, winter and lambing habitat. This stipulation does not apply to the operation and maintenance of production facilities unless the findings of analysis demonstrate the continued need for such mitigation and that less stringent, project-specific mitigation measures would be insufficient.

Objective: To protect bighorn rutting, winter and lambing habitat from disturbance and facilitate long-term maintenance of bighorn sheep populations.

Exception: An exception to this stipulation may be granted by the authorized officer if the operator submits a plan that demonstrates that impacts from the proposed action are minimal or can be adequately mitigated.

Modification: The boundaries of the stipulated area may be modified if the authorized officer determines that portions of the area no longer contain rutting, winter, and lambing habitat for bighorn sheep. The dates for the timing restriction may be modified if new wildlife use information indicates that the dates are not valid for the leasehold.

Waiver: This stipulation may be waived if the authorized officer, in consultation with MFWP, determines that the entire leasehold no longer contains bighorn sheep rutting, winter or lambing areas.

RESOURCE: BIGHORN SHEEP CORE AREAS

Stipulation: Timing Limitation. Activity is prohibited from December 1 through May 15 in bighorn sheep core habitat. This stipulation does not apply to the operation and maintenance of production facilities unless the findings of analysis demonstrate the continued need for such mitigation and that less stringent, project-specific mitigation measures would be insufficient.

Objective: To protect bighorn sheep yearlong habitat necessary for long-term maintenance of bighorn sheep populations.

Exception: An exception to this stipulation may be granted by the authorized officer, in consultation with MFWP, if the operator submits a plan which demonstrates that impacts from the proposed action are minimal or can be adequately mitigated.

Modification: The boundaries of the stipulated area may be modified if the authorized officer, in consultation with MFWP, determines that portions of the bighorn sheep core areas can be occupied without adversely affecting bighorn sheep use.

Waiver: This stipulation may be waived if the authorized officer, in consultation with MFWP, determines that the entire leasehold can be occupied without adversely affecting bighorn sheep use in the core areas.

RESOURCE: BALD EAGLE NEST SITES/BREEDING HABITAT

Stipulation: No Surface Occupancy. Activity is prohibited within 1/2 mile of bald eagle nest sites and within bald eagle nesting habitat in riparian areas.

Objective: To protect bald eagle nesting sites and/or breeding habitat in accordance with the Montana Bald Eagle Management Plan.

Exception: An exception may be granted by the authorized officer if the operator submits a plan which demonstrates that the proposed action will not affect the bald eagle or its habitat. If the authorized officer determines that the action may have an adverse affect, the operator may submit a plan demonstrating that the impacts can be adequately mitigated. This plan must be approved by BLM in consultation with the USFWS.

Modification: The boundaries of the stipulated area may be modified if the authorized officer, in consultation with USFWS, determines that the area can be occupied without adversely affecting bald eagle nest sites or nesting habitats.

Waiver: This stipulation may be waived if the authorized officer, in consultation with USFWS, determines that the entire leasehold can be occupied without adversely affecting bald eagle nest sites or nesting habitat.

RESOURCE: BALD EAGLE NEST SITES/BREEDING HABITAT

Stipulation: Timing Limitation. No activity is allowed from February 1 through August 31 in a one mile radius around bald eagle nest sites. This stipulation does not apply to the operation and maintenance of production facilities unless the findings of analysis demonstrate the continued need for such mitigation and that less stringent, project-specific mitigation measures would be insufficient.

Objective: To protect bald eagle nesting site and/or breeding habitat in accordance with the Montana Bald Eagle Management Plan.

Exception: An exception may be granted by the authorized officer if the operator submits a plan which demonstrates that the proposed action will not affect the bald eagle or its habitat. If the authorized officer determines that the action may have an adverse affect, the operator may submit a plan demonstrating that the impacts can be adequately mitigated. This plan must be approved by BLM in consultation with the USFWS.

Modification: A modification may be granted if new habitat studies show that a portion of the area is not used by eagles.

Waiver: This stipulation may be waived if the authorized officer, in consultation with USFWS, determines that the entire leasehold can be occupied without adversely affecting bald eagle nest sites or nesting habitat.

RESOURCE: RAPTOR BREEDING TERRITORIES (GOLDEN EAGLE, PRAIRIE FALCON, SWAINSON'S HAWK)

Stipulation: No Surface Occupancy. Activity is prohibited within ¼ mile of raptor nest sites which have been active within the past five years. This stipulation does not apply to the operation and maintenance of production facilities unless the findings of analysis demonstrate the continued need for such mitigation and that less stringent, project-specific mitigation measures would be insufficient.

Objective: To protect reproductive potential of breeding habitat for special status raptors.

Exception: An exception to this stipulation may be granted by the authorized officer of the operator submits a plan that demonstrates the impacts from the proposed action are minimal or can be adequately mitigated.

Modification: The boundaries of the stipulated area may be modified if the authorized officer determines that portions of the area no longer are within 1/2 mile of raptor nest sites. The dates for the timing restriction may be modified if new information indicates that the dates are not valid for the leasehold.

Waiver: This stipulation may be waived if the authorized officer determines that the entire leasehold no longer is within 1/2 mile of nest sites.

RESOURCE: PEREGRINE FALCON NEST SITES/BREEDING HABITAT

Stipulation: No Surface Occupancy. Activity is prohibited within ¼ mile of peregrine falcon nest sites.

Objective: To protect peregrine falcon nesting sites and/or breeding habitat.

Exception: An exception may be granted by the authorized officer if the operator submits a plan that demonstrates that the proposed action will not affect the peregrine falcon or its habitat. If the authorized officer determines that the action may have an adverse affect, the operator may submit a plan demonstrating that the impacts can be adequately mitigated. This plan must be approved by BLM in consultation with USFWS.

Modification: The boundaries of the stipulated area may be modified if the authorized officer, in consultation with USFWS, determines that portions of the area can be occupied without adversely affecting peregrine falcon nest sites or breeding habitat.

Waiver: This stipulation may be waived if the authorized officer, in consultation with USFWS, determines that the entire leasehold can be occupied without adversely affecting peregrine falcon nest sites or breeding habitat.

RESOURCE: FERRUGINOUS HAWK BREEDING TERRITORIES

Stipulation: No Surface Occupancy. Activity is prohibited within ¼ mile of ferruginous hawk nest sites that have been active within the past 5 years. This stipulation does not apply to the operation and maintenance of production facilities unless the findings of analysis demonstrate the continued need for such mitigation and that less stringent, project-specific mitigation measures would be insufficient.

Objective: To maintain the reproductive potential of ferruginous hawk nest sites.

Exception: An exception to this stipulation may be granted by the authorized officer if the operator submits a plan that demonstrated that the impacts from the proposed action are minimal or can be adequately mitigated.

Modification: The boundaries of the stipulated area may be modified if the authorized officer determines that portions of the area can be occupied without adversely affecting the production potential of ferruginous hawk nest sites.

Waiver: This stipulation may be waived if the authorized officer determines that the entire leasehold can be occupied without adversely affecting the production potential of ferruginous hawk nest sites.

RESOURCE: THREATENED, ENDANGERED, AND SPECIAL STATUS SPECIES

Stipulation: Controlled Surface Use. The lease area may now or hereafter contain plants, animals, or their habitats determined to be threatened, endangered, or other special status species. BLM may recommend modifications to exploration and development proposals to further its conservation and management objective to avoid BLM-approved activity that will contribute to a need to list such a species or their habitat. BLM may require modifications to or disapprove proposed activity that is likely to result in jeopardy to the continued existence of a proposed or listed threatened or endangered species or result in the destruction or adverse modification of a designated or proposed critical habitat. BLM will not approve any ground-disturbing activity that may affect any such species or requirements of the Endangered Species Act as amended, 16 U.S.C. § 1531 et seq., including completion of any required procedure for conference or consultation.

Objective: Avoid BLM-approved activity that will contribute to a need to list a species or their habitat as threatened or endangered.

Exception: None.

Modification: None.

Waiver: None.

RESOURCE: WESTSLOPE CUTTHROAT TROUT HABITAT (90-99% PURE)

Stipulation: No Surface Occupancy. No activity allowed within 1/4 mile from centerline of stream containing known populations of 90-99% genetically pure westslope cutthroat trout.

Objective: To ensure healthy aquatic habitat exists in drainages important to the viability of Upper Missouri River and Columbia River Basins Westslope Cutthroat Trout.

Exception: An exception may be granted after a site assessment is conducted and if the operator can demonstrate in a surface use plan of operations that adverse effects can be eliminated and activities would not affect sensitive trout populations. Apply the following mitigation measures:

a) No net increase in sediment over existing condition.

b) No adverse effects on water quality and quantity.

Modification: None.

Waiver: A waiver may be granted if the MFWP determines the stream is no longer considered important to the viability of the species.

RESOURCE: FLUVIAL AND ADFLUVIAL ARCTIC GRAYLING HABITAT

Stipulation: No Surface Occupancy. No activity allowed within 1/4 mile from centerline of streams containing known populations of Arctic grayling.

Objective: To ensure healthy aquatic habitat exists along rivers and tributaries important to the viability of fluvial and adfluvial Arctic grayling.

Exception: An exception may be granted after a site assessment is conducted and if the operator can demonstrate in a surface use plan of operations that adverse effects can be eliminated and activities would not affect sensitive Arctic grayling populations. The following mitigation measures would apply:

a) No net increase in sediment over existing condition.

b) No adverse effects on water quality or quantity.

Modification: None.

Waiver: A waiver may be granted if the MFWP and the USFWS determines the stream is no longer considered important to the viability of the species.

RESOURCE: BULL TROUT

Stipulation: Controlled Surface Use. Activities may be relocated, require special design, or require on and off site mitigation measures to prevent impacts to bull trout populations.

Objective: 1) To ensure that proposed activities do not adversely affect the viability of bull trout, operations will be designed and/or located so as to not adversely affect the viability of bull trout. 2) To restrict the timing or type of activities on roads, if needed to control sediment delivery to streams. 3) To require coordination or adjustments of activities within bull trout habitat to avoid or minimize the potential for adverse effects to bull trout because of cumulative impacts from oil and gas activities, plus other activities within the area. This stipulation may limit the extent of field development.

Exception: An exemption may be granted if the operator demonstrates in a plan of operations that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: None.

Waiver: A waiver may be granted if new habitat studies in coordination with the USFWS conclude that the area affected by this stipulation is not in bull trout occupied habitat.

RESOURCE: YELLOWSTONE CUTTHROAT

Stipulation: No Surface Occupancy. No activity allowed within ¼ mile from centerline of streams containing known populations of genetically pure Yellowstone cutthroat trout.

Objective: To ensure healthy aquatic habitat exists in drainages important to the viability of Yellowstone Cutthroat.

Exception: An exception may be granted after a site assessment is conducted and if the operator can demonstrate in a surface use plan of operations that adverse effects can be eliminated and activities would not affect sensitive trout populations. The following mitigation measures would apply:

a) No net increase in sediment over existing condition.

b) No adverse effects on water quality and quantity.

Modification: None

Waiver: A waiver may be granted if the MFWP and the USFWS determines the stream is no longer considered important to the viability of the species.

RESOURCE: CLASS 1 FISHERIES

Stipulation: No Surface Occupancy. No activity allowed within 1000’ from centerline of Class 1 fishery streams (Blue Ribbon trout streams).

Objective: To ensure healthy aquatic habitat are maintained along Class 1 fisheries.

Exception: An exception may be granted if MFWP modify the Class 1 fisheries rating. Application of the following mitigation measures apply:

a) No net increase in sediment over existing condition.

b) No adverse effects on water quality and quantity.

Modification: None.

Waiver: None.

RESOURCE: DEVELOPED RECREATION SITES

Stipulation: No Surface Occupancy. Activity is prohibited within 300 feet of developed recreation sites. Currently there are 49 developed recreation sites: Beartooth Landing Rec Site, Bryant Creek Rec Site, Buffalo Hump Rec Site, Carbella Rec Site, Clark’s Bay Rec Site, Crimson Bluff Rec Site, Crow Creek Rec Site, Departure Point Rec Site, Devil’s Elbow Rec Site, Dickie Bridge Rec Site, Divide Bridge Campground, Divide Bridge Day Use, East Bank Rec Site, Four Corners OHV Trailhead, French Bar Rec Site, Galena Gulch Rec Site, Headlane Trailhead, Holter Lake Dam Rec Site, Holter Lake Rec Site, Jerry Creek Br Fishing Access, John G Mine Trailhead, Log Gulch Rec Site, Lombard Historical, Lower Toston Rec Site, Maiden Rock East, McMaster Hill East Trailhead, McMaster Hill West Trailhead, Moose Creek Trailhead, Ohio Gulch OHV Trailhead, Pintlar Creek Rec Site, Pipestone

OHV Rec Site, Radersburg OHV Trailhead, Ringing Rocks Rec Site, Sawlog Creek Rec Site, Sawmill Gulch Trailhead, Sheep Camp Rec Site, Sheep Mountain Trailhead, Sleeping Giant Trailhead, Spokane Bay Rec Site, Spokane Bay Trailhead, Spokane Hills South, Titan Gulch Rec Site, Toston Dam Rec Site, Tumbleweed Lane Trailhead, Two Camps Vista, Ward Ranch Historical Site, Whiskey Gulch Trailhead, White Sandy Campground, Woodsiding Trailhead

Objective: To recognize and protect the public's opportunity for quality recreation experiences at those sites developed for that purpose. A 300-foot buffer would protect capital investment, and to a limited extent, visitors' recreation experiences while at the site.

Exception: An exception may be granted by the authorized officer if the operator submits a plan demonstrating that impacts from the proposed action are acceptable or can be mitigated.

Modification: The boundaries of the area may be modified by the authorized officer if the recreation area boundaries are changed.

Waiver: This stipulation may be waived by the authorized officer if the entire leasehold no longer contains a developed recreation area.

RESOURCE: CULTURAL AND PALEONTOLOGICAL RESOURCES

Stipulation: Controlled Surface Use. An inventory of the leased lands may be required prior to surface disturbance to determine if cultural resources or paleontological localities are present and to identify needed mitigation measures. Prior to undertaking any surface-disturbing activities on the lands covered by this lease, the lessee or operator shall:

1) Contact the Surface Management Agency (SMA) to determine if a cultural or paleontological resource inventory is required. If an inventory is required, then;
2) The SMA will complete the required inventory; or the lessee or operator, at their option, may engage the services of a cultural resource consultant acceptable to the SMA to conduct an inventory of the area of proposed surface disturbance. The operator may elect to inventory an area larger than the planned disturbance to cover possible site relocation, or for planning purposes.
3) Implement mitigation measures required by the SMA. Mitigation may include the relocation of proposed lease-related activities or other protective measures such as data recovery and/or extensive recordation.

The lessee or operator is required to bring to the attention of the field office manager any cultural resources or other objects of scientific interest discovered as a result of approved operations under the lease, and shall leave all discoveries intact and undisturbed until directed to proceed by the field office manager (16 U.S.C. 470).

Objective: Compliance with Section 106 of the National Historic Preservation Act is required for all actions which may affect cultural resources eligible for nomination to the National Register of Historic Places. Section 6 of the Oil and Gas Lease Terms (Form 3100-11) requires that operations be conducted in a manner that minimizes adverse impacts to cultural and other resources.

Exception: None.

Modification: None.

Waiver: None.

RESOURCE: VRM CLASS II, III, & IV AREAS

Stipulation: Controlled Surface Use. All surface disturbing activities and construction of semi-permanent and permanent facilities may require special design including location, painting, and camouflage to blend with the natural surroundings and meet the visual quality objectives for each respective class.

Objective: To control the visual impacts of activities and facilities within acceptable levels.

Exception: None

Modification: None

Waiver: None

RESOURCE: WETLANDS, FLOODPLAINS, RIPARIAN AREAS, AND WATER QUALITY

Stipulation: No Surface Occupancy. Activity is prohibited within 500 feet of reservoirs, lakes, ponds, and intermittent, ephemeral, or small perennial streams, and within 1000 feet of perennial streams and rivers.

Objective: To protect biological and hydrological features associated with wetlands, floodplains, and riparian areas.

Exception: An exception to this stipulation may be granted by the authorized officer if the operator submits a plan that demonstrates that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The area affected by this stipulation may be modified by the authorized officer if it is determined that portions of the area do not include wetlands, floodplains, or riparian areas.

Waiver: This stipulation may be waived by the authorized officer if it is determined that the entire leasehold does not include wetlands, floodplains, or riparian areas.

RESOURCE: SPECIAL STATUS PLANT HABITATS

Stipulation: Controlled Surface Use. A field inspection will be conducted for special status plant species by the lessee prior to any surface disturbance. A list of special status plant species will be provided to the lessee at the time of the lease. Plant Species on the list are subject to change over time as new information becomes available. Plant inventories must be conducted at a time of year when the target species are identifiable. A report must be provided to the BLM documenting the presence or absence of special status plants in the area proposed for surface disturbance. The findings of this report may result in restrictions to the operator's plans or may preclude use and occupancy.

Objective: Protect and conserve rare plants, associated plant communities and the habitat that supports them.

Exception: An exception may be granted if BLM determines that the portion of the lease identified for surface disturbing activities does not support special status plant species or provide potential habitat for these species.

Modification: The boundaries of the area to be inventoried for special status plants may be modified if BLM determines that a large portion of the lease identified for surface disturbing activities doesn't support special status plant species or provide potential habitat for these species.

Waiver: The field inspection and plant inventory may be waived by the authorized if he/she determines that the subject lease occurs in an area with no known populations of special status plant species and that the area doesn't provide habitat for those species.

RESOURCE: KNOWN OR DISCOVERED SPECIAL STATUS PLANTS OR POPULATIONS

Stipulation: No Surface Occupancy. Surface occupancy and use is prohibited within 1/4 mile of special status plant species

Objective: Protect and conserve rare plants, associated plant communities and the habitat that supports them.

Exception: None.

Modification: The boundaries of the no surface occupancy area may be modified if BLM determines that land within ¼ mile of the special status plant population does not provide potential habitat for these species.

Waiver: None.

RESOURCE: SLOPES >30% ON NON-BOULDER BATHOLITH SOILS OR SLOPES >20% ON BOULDER BATHOLITH SOILS

Stipulation: Prior to surface disturbance on slopes of greater than 20 percent on Boulder Batholith soils, or 30 percent on non-Boulder Batholith soils, an engineering/reclamation plan must be approved by the authorized officer. Site productivity will be restored.

- Surface runoff will be adequately controlled.
- Off-site areas will be protected from accelerated soil erosion.
- Surface disturbing activities will not be conducted during extended wet periods.

Objective: To maintain soil productivity and provide necessary protection to prevent excessive soil erosion on steep slopes.

Exception: An exception may be granted if the operator can demonstrate in a plan of operations that adverse effects can be minimized and activities safely conducted.

Modification: The area affected by this stipulation may be modified by the authorized officer if it is determined that portions of area do not include slopes over 30 percent on non-Boulder Batholith soils or 20 percent on Boulder Batholith, or the operator can demonstrate in a plan of operations that adverse effects can be minimized.

Waiver: This stipulation may be waived by the authorized officer if it is determined that none of the leasehold contains slopes greater than 30 percent on non-Boulder Batholith soils or 20 percent on Boulder Batholith soils.

RESOURCE: CONTINENTAL DIVIDE NATIONAL SCENIC TRAIL (MARYSVILLE)

Stipulation: No Surface Occupancy. Activity is prohibited within 300 feet of designated Continental Divide National Scenic Trail.

Objective: To preserve and protect the existing scenic character of the landscape along the trail.

Exception: No exceptions will be granted.

Modification: No modifications will be granted.

Waiver: No waivers will be granted.

ALTERNATIVE B OIL AND GAS STIPULATIONS

Resource: Grizzly Bear – Recovery Zone

Stipulation: No Surface Occupancy. Activity is prohibited within the boundary of the Recovery Zone for Grizzly Bears.

Objective: To preclude surface disturbing activities in the Grizzly Bear Recovery Zone.

Exception: An exception will not be granted while the area is important to grizzly bear recovery or to its conservation following a change in legal status under the Endangered Species Act. Conditions for Exception require that the area is no longer classified as necessary for the recovery of the species.

Modification: This stipulation may be modified if a portion of the area is no longer important to grizzly bear recovery or to its conservation following a change in legal status under the Endangered Species Act. Conditions for Modification require that a portion of the area is no longer classified as necessary for the recovery of the species and is not considered important to it conservation.

Waiver: This stipulation will not be waived while the area is important to grizzly bear recovery or to its conservation following a change in legal status under the Endangered Species Act. Conditions for Waiver require that the area is no longer classified as necessary for the recovery or conservation of the species.

Resource: Grizzly Bear - Distribution Zone

Stipulation: Timing Limitation. Activity is prohibited from April 1 to June 30 and from September 15 – October 15 in the Grizzly Bear Distribution Zone.

Objective: To preclude surface disturbing activities in grizzly bear denning areas which could cause increased stress and/or displacement of animals during critical time periods (April 1 - June 30 and September 15 – October 15).

Exception: An exception may be granted if it is determined that the animals have moved out of and are not using the general area during the particular year.

Modification: A modification of the stipulation may be granted if new habitat studies show that a portion of the area is not used by grizzly bear for denning.

Waiver: A waiver may be granted if new habitat studies in coordination with the Fish and Wildlife Service conclude that the area affected by this stipulation is not critical for grizzly bear denning.

Resource: Gray Wolf – Former Northwest Montana Recovery Area Endangered Population

Stipulation: Timing Limitation. Activity is prohibited within a 1 mile buffer around wolf dens or rendezvous sites from April 15 to June 30 in the Northwest Montana Recovery Area. This stipulation would be applied to the Northwest Montana Recovery Area (94,700 acres) but there are no known den or rendezvous sites currently mapped in this area.

Objective: To preclude surface disturbing activities in wolf denning or rendezvous areas in the former Northwest Montana Recovery Area which could cause increased stress and/or displacement of animals during the critical time period (April 15 - June 30).

Exception: An exception may be granted if it is determined that the animals have moved out of and are not using the general area during the particular year.

Modification: A modification of the stipulation may be granted if new habitat studies show that a portion of the area is not used by wolves for denning or for rendezvous sites.

Waiver: A waiver may be granted if new habitat studies in coordination with the Fish and Wildlife Service conclude that the area affected by this stipulation in not critical for wolf denning or for rendezvous sites.

Resource: Prairie Dog Towns

Stipulation: No Surface Occupancy. Activity is prohibited within the boundary of any prairie dog town.

Objective: To protect habitat for prairie dog towns.

Exception: An exception to this stipulation may be granted by the authorized officer if the operator submits a plan which demonstrates that impacts from the proposed action are minimal or can be adequately mitigated.

Modification: The boundaries of the stipulated area may be modified if the authorized officer determines that portions of the area can be occupied without adversely affecting prairie dogs.

Waiver: This stipulation may be waived if the authorized officer, in consultation with MFWP and USFWS, determines that the entire leasehold no longer contains prairie dogs.

Resource: Sage Grouse Winter/Spring Range

Stipulation: Timing Limitation. No activity from December 1 through May 15 within winter and spring range for sage grouse. This stipulation does not apply to the operation and maintenance of production facilities unless the findings of analysis demonstrate the continued need for such mitigation and that less stringent, project-specific mitigation measures would be insufficient.

Objective: To protect sage grouse winter range from disturbance during the winter/spring season, and to facilitate long-term maintenance of wildlife populations.

Exception: An exception to this stipulation may be granted by the authorized officer in consultation with MFWP and the USFWS, if the operator submits a plan that demonstrates that impacts from the proposed action are minimal or can be adequately mitigated.

Modification: The boundaries of the stipulated area may be modified if the authorized officer determines that portions of the area no longer contain sage grouse winter/spring range. The dates for the timing restriction may be modified if new information indicates that the December 1 through May 15 dates are not valid for the leasehold.

Waiver: This stipulation may be waived if the authorized officer determines that the entire leasehold no longer contains sage grouse winter/spring range, or if in coordination with MFWP and the USFWS, determines that the area is not critical for sage grouse.

RESOURCE: SAGE GROUSE STRUTTING GROUNDS (LEKS)

Stipulation: No Surface Occupancy. Activity is prohibited within 1/4 mile of sage grouse leks.

Objective: To protect sage grouse strutting grounds and leks to maintain regional sage grouse populations.

Exception: An exception to this stipulated area may be modified if the authorized officer determines that portions of the area can be occupied without adversely affecting sage grouse leks.

Modification: The boundaries of the stipulated area may be modified if the authorized officer determines that portions of the area can be occupied without adversely affecting sage grouse leks.

Waiver: The stipulation may be waived if the authorized officer, in consultation with MFWP, determines that the entire leasehold can be occupied without adversely affecting sage grouse leks.

RESOURCE: SAGE GROUSE BREEDING HABITAT

Stipulation: Timing Limitation. Activity is restricted from March 1 through June 30 in nesting and early brood rearing habitat (defined as within three miles of leks). This stipulation does not apply to the operation and maintenance of production facilities unless the findings of analysis demonstrate the continued need for such mitigation and that less stringent, project-specific mitigation measures would be insufficient.

Objective: To protect sage grouse leks and breeding habitat necessary for long-term maintenance of regional sage grouse populations.

Exception: An exception to this stipulation may be granted by the authorized officer if the operator submits a plan that demonstrates that impacts from the proposed action are minimal or can be adequately mitigated.

Modification: The boundaries of the stipulated area may be modified if the authorized officer determines that portions of the area can be occupied without adversely affecting sage grouse leks.

Waiver: This stipulation may be waived if the authorized officer, in consultation with MFWP and the USFWS, determines that the entire leasehold can be occupied without adversely affecting sage grouse leks or the surrounding breeding habitat.

RESOURCE: WILDLIFE MANAGEMENT AREAS

Stipulation: No Surface Occupancy. Activity is prohibited within the boundary of Wildlife Management Areas administered by Montana Department of Fish, Wildlife, and Parks (MFWP).

Objective: To protect MFWP elk winter range necessary for long-term maintenance of regional elk populations and other wildlife values.

Exception: None.

Modification: None.

Waiver: None.

RESOURCE: BIG GAME WINTER/SPRING RANGE

Stipulation: Timing Limitation. No activity from December 1 through May 15 within winter range for wildlife. This stipulation does not apply to the operation and maintenance of production facilities unless the findings of analysis demonstrate the continued need for such mitigation and that less stringent, project-specific mitigation measures would be insufficient.

Objective: To protect mule deer, elk, antelope, and moose winter/spring range from disturbance during the winter/spring season, and to facilitate long-term maintenance of wildlife populations.

Exception: An exception to this stipulation may be granted by the authorized officer in consultation with MFWP, if the operator submits a plan that demonstrates that impacts from the proposed action are minimal or can be adequately mitigated.

Modification: The boundaries of the stipulated area may be modified if the authorized officer, in consultation with MFWP, determines that portions of the area no longer contain wildlife winter/spring range. The dates for the timing restriction may be modified if new wildlife use information indicates that the December 1 through May 15 dates are not valid for the leasehold.

Waiver: This stipulation may be waived if the authorized officer, in consultation with MFWP, determines that the entire leasehold no longer contains winter/spring range for wildlife.

RESOURCE: ELK CALVING/BIG GAME BIRTHING AREAS

Stipulation: Timing Limitation. Activity is prohibited from April 1 through June 30 in big game birthing areas. This stipulation does not apply to the operation and maintenance of production facilities unless the findings of analysis demonstrate the continued need for such mitigation and that less stringent, project-specific mitigation measures would be insufficient.

Objective: To protect mule deer, elk, antelope, and moose birthing areas from disturbance and facilitate long-term maintenance of wildlife populations.

Exception: An exception to this stipulation may be granted by the authorized officer if the operator submits a plan that demonstrates that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The boundaries of the stipulated area may be modified if the authorized officer determines that portions of the area no longer contain birthing habitat for big game species. The dates for the timing restriction may be modified if new wildlife use information indicates that the dates are not valid for the leasehold.

Waiver: This stipulation may be waived if the authorized officer, in consultation with MFWP, determines that the entire leasehold no longer contains big game birthing areas.

RESOURCE: BIGHORN SHEEP YEARLONG RANGE

Stipulation: Timing Limitation. Activity is prohibited from November 1 through June 30 in bighorn rutting, winter and lambing habitat. This stipulation does not apply to the operation and maintenance of production facilities unless the findings of analysis demonstrate the continued need for such mitigation and that less stringent, project-specific mitigation measures would be insufficient.

Objective: To protect bighorn rutting, winter and lambing habitat from disturbance and facilitate long-term maintenance of bighorn sheep populations.

Exception: An exception to this stipulation may be granted by the authorized officer if the operator submits a plan that demonstrates that impacts from the proposed action are minimal or can be adequately mitigated.

Modification: The boundaries of the stipulated area may be modified if the authorized officer determines that portions of the area no longer contain rutting, winter, and lambing habitat for bighorn sheep. The dates for the timing restriction may be modified if new wildlife use information indicates that the dates are not valid for the leasehold.

Waiver: This stipulation may be waived if the authorized officer, in consultation with MFWP, determines that the entire leasehold no longer contains bighorn sheep rutting, winter or lambing areas.

RESOURCE: BIGHORN SHEEP CORE AREAS

Stipulation: No Surface Occupancy. Activity is prohibited within the bighorn sheep core areas.

Objective: To protect bighorn sheep yearlong habitat necessary for long-term maintenance of bighorn sheep populations.

Exception: An exception to this stipulation may be granted by the authorized officer, in consultation with MFWP, if the operator submits a plan which demonstrates that impacts from the proposed action are minimal or can be adequately mitigated.

Modification: The boundaries of the stipulated area may be modified if the authorized officer, in consultation with MFWP, determines that portions of the bighorn sheep core areas can be occupied without adversely affecting bighorn sheep use.

Waiver: This stipulation may be waived if the authorized officer, in consultation with MFWP, determines that the entire leasehold can be occupied without adversely affecting bighorn sheep core areas.

RESOURCE: BALD EAGLE NEST SITES/BREEDING HABITAT

Stipulation: No Surface Occupancy. Activity is prohibited within 1/2 mile of bald eagle nest sites and within bald eagle nesting habitat in riparian areas.

Objective: To protect bald eagle nesting sites and/or breeding habitat in accordance with the Montana Bald Eagle Management Plan.

Exception: An exception may be granted by the authorized officer if the operator submits a plan which demonstrates that the proposed action will not affect the bald eagle or its habitat. If the authorized officer determines that the action may have an adverse affect, the operator may submit a plan demonstrating that the impacts can be adequately mitigated. This plan must be approved by BLM in consultation with the USFWS.

Modification: The boundaries of the stipulated area may be modified if the authorized officer, in consultation with USFWS, determines that the area can be occupied without adversely affecting bald eagle nest sites or nesting habitats.

Waiver: This stipulation may be waived if the authorized officer, in consultation with USFWS, determines that the entire leasehold can be occupied without adversely affecting bald eagle nest sites or nesting habitat.

RESOURCE: BALD EAGLE NEST SITES/BREEDING HABITAT

Stipulation: Timing Limitation. No activity is allowed from February 1 through August 31 in a one mile radius around bald eagle nest sites. This stipulation does not apply to the operation and maintenance of production facilities unless the findings of analysis demonstrate the continued need for such mitigation and that less stringent, project-specific mitigation measures would be insufficient.

Objective: To protect bald eagle nesting site and/or breeding habitat in accordance with the Montana Bald Eagle Management Plan.

Exception: An exception may be granted by the authorized officer if the operator submits a plan which demonstrates that the proposed action will not affect the bald eagle or its habitat. If the authorized officer determines that the action may have an adverse affect, the operator may submit a plan demonstrating that the impacts can be adequately mitigated. This plan must be approved by BLM in consultation with the USFWS.

Modification: A modification may be granted if new habitat studies show that a portion of the area is not used by eagles.

Waiver: This stipulation may be waived if the authorized officer, in consultation with USFWS, determines that the entire leasehold can be occupied without adversely affecting bald eagle nest sites or nesting habitat.

RESOURCE: RAPTOR BREEDING TERRITORIES (GOLDEN EAGLE, PRAIRIE FALCON, SWAINSON'S HAWK)

Stipulation: Timing Limitation. No activity from March 1 through July 31, within 1/2 mile of raptor nest sites which have been active within the past five years. This stipulation does not apply to the operation and maintenance of production facilities unless the findings of analysis demonstrate the continued need for such mitigation and that less stringent, project-specific mitigation measures would be insufficient.

Objective: To protect reproductive potential of breeding habitat for special status raptors.

Exception: An exception to this stipulation may be granted by the authorized officer of the operator submits a plan that demonstrates the impacts from the proposed action are minimal or can be adequately mitigated.

Modification: The boundaries of the stipulated area may be modified if the authorized officer determines that portions of the area no longer are within 1/2 mile of raptor nest sites. The dates for the timing restriction may be modified if new information indicates that the dates are not valid for the leasehold.

Waiver: This stipulation may be waived if the authorized officer determines that the entire leasehold no longer is within 1/2 mile of nest sites.

RESOURCE: PEREGRINE FALCON NEST SITES/BREEDING HABITAT

Stipulation: No Surface Occupancy. Activity is prohibited within one mile of peregrine falcon nest sites.

Objective: To protect peregrine falcon nesting sites and/or breeding habitat.

Exception: An exception may be granted by the authorized officer if the operator submits a plan that demonstrates that the proposed action will not affect the peregrine falcon or its habitat. If the authorized officer determines that the action may have an adverse affect, the operator may submit a plan demonstrating that the impacts can be adequately mitigated. This plan must be approved by BLM in consultation with USFWS.

Modification: The boundaries of the stipulated area may be modified if the authorized officer, in consultation with USFWS, determines that portions of the area can be occupied without adversely affecting peregrine falcon nest sites or breeding habitat.

Waiver: This stipulation may be waived if the authorized officer, in consultation with USFWS, determines that the entire leasehold can be occupied without adversely affecting peregrine falcon nest sites or breeding habitat.

RESOURCE: FERRUGINOUS HAWK BREEDING TERRITORIES

Stipulation: No Surface Occupancy. Activity is prohibited within 1/2 mile of ferruginous hawk nest sites that have been active within the past 5 years.

Objective: To maintain the reproductive potential of ferruginous hawk nest sites.

Exception: An exception to this stipulation may be granted by the authorized officer if the operator submits a plan that demonstrated that the impacts from the proposed action are minimal or can be adequately mitigated.

Modification: The boundaries of the stipulated area may be modified if the authorized officer determines that portions of the area can be occupied without adversely affecting the production potential of ferruginous hawk nest sites.

Waiver: This stipulation may be waived if the authorized officer determines that the entire leasehold can be occupied without adversely affecting the production potential of ferruginous hawk nest sites.

RESOURCE: THREATENED, ENDANGERED, AND SPECIAL STATUS SPECIES

Stipulation: Controlled Surface Use. The lease area may now or hereafter contain plants, animals, or their habitats determined to be threatened, endangered, or other special status species. BLM may recommend modifications to exploration and development proposals to further its conservation and management objective to avoid BLM-approved activity that will contribute to a need to list such a species or their habitat. BLM may require modifications to or disapprove proposed activity that is likely to result in jeopardy to the continued existence of a proposed or listed threatened or endangered species or result in the destruction or adverse modification of a designated or proposed critical habitat. BLM will not approve any ground-disturbing activity that may affect any such species or requirements of the Endangered Species Act as amended, 16 U.S.C. § 1531 et seq., including completion of any required procedure for conference or consultation.

Objective: Avoid BLM-approved activity that will contribute to a need to list a species or their habitat as threatened or endangered.

Exception: None.

Modification: None.

Waiver: None.

RESOURCE: WESTSLOPE CUTTHROAT TROUT HABITAT (90-99% PURE)

Stipulation: No Surface Occupancy. No activity allowed within 1/2 mile from centerline of stream containing known populations of 90-99% genetically pure westslope cutthroat trout.

Objective: To ensure healthy aquatic habitat exists in drainages important to the viability of Upper Missouri River and Columbia River Basins Westslope Cutthroat Trout.

Exception: An exception may be granted after a site assessment is conducted and if the operator can demonstrate in a surface use plan of operations that adverse effects can be eliminated and activities would not affect sensitive trout populations. Apply the following mitigation measures:

a) No net increase in sediment over existing condition.

b) No adverse effects on water quality and quantity.

Modification: None.

Waiver: A waiver may be granted if the MFWP determines the stream is no longer considered important to the viability of the species.

RESOURCE: WESTSLOPE CUTTHROAT TROUT HABITAT (99-100% PURE)

Stipulation: No Surface Occupancy. No activity allowed within ½ mile from centerline of stream containing known populations of 99-100% genetically pure westslope cutthroat trout.

Objective: To prevent sensitive aquatic habitat and trout populations from being impacted.

Exception: An exemption may be granted after a site assessment is conducted and if the operator can demonstrate in a surface use plan of operations that adverse effects can be eliminated and activities would not affect sensitive trout populations. Apply the following mitigation measures:

a) No net increase in sediment over existing condition.

b) No adverse effects on water quality and quantity.

Modifications: None

Waiver: A waiver may be granted if the MFWP determines the stream is no longer considered important to the viability of the species.

RESOURCE: FLUVIAL AND ADFLUVIAL ARCTIC GRAYLING HABITAT

Stipulation: No Surface Occupancy. No activity allowed within 1/2 mile from centerline of stream containing known populations of Arctic grayling.

Objective: To ensure healthy aquatic habitat exists along rivers and tributaries important to the viability of fluvial and adfluvial Arctic grayling.

Exception: An exception may be granted after a site assessment is conducted and if the operator can demonstrate in a surface use plan of operations that adverse effects can be eliminated and activities would not affect sensitive Arctic grayling populations. The following mitigation measures would apply:

a) No net increase in sediment over existing condition.

b) No adverse effects on water quality or quantity.

Modification: None.

Waiver: A waiver may be granted if the MFWP and the USFWS determines the stream is no longer considered important to the viability of the species.

RESOURCE: BULL TROUT

Stipulation: No Surface Occupancy. No activity allowed within 1/2 mile from centerline of streams containing known populations of bull trout.

Objective: To ensure healthy aquatic habitat exists in drainages important to the viability of bull trout.

Exception: An exception may be granted after a site assessment is conducted and if the operator can demonstrate in a surface use plan of operations that adverse effects can be eliminated and activities would not affect sensitive trout populations. Apply the following mitigation measures:

a) No net increase in sediment over existing condition.

b) No adverse effects on water quality and quantity.

Modification: None.

Waiver: A waiver may be granted if the MFWP and the USFWS determines the stream is no longer considered important to the viability of the species.

RESOURCE: YELLOWSTONE CUTTHROAT (90-100% PURE)

Stipulation: No Surface Occupancy. No activity allowed within 1/2 mile from centerline of streams containing known populations of 90-100% genetically pure Yellowstone cutthroat trout.

Objective: To ensure healthy aquatic habitat exists in drainages important to the viability of Yellowstone Cutthroat.

Exception: An exception may be granted after a site assessment is conducted and if the operator can demonstrate in a surface use plan of operations that adverse effects can be eliminated and activities would not affect sensitive trout populations. The following mitigation measures would apply:

a) No net increase in sediment over existing condition.

b) No adverse effects on water quality and quantity.

Modification: None

Waiver: A waiver may be granted if the MFWP and the USFWS determines the stream is no longer considered important to the viability of the species.

RESOURCE: STREAMS WITH HIGH RESTORATION POTENTIAL FOR NATIVE FISH

Stipulation: No Surface Occupancy. No activity allowed within ½ mile from centerline of streams that are identified by the BLM as having high restoration potential for westslope cutthroat trout, Yellowstone cutthroat trout, Arctic grayling and/or bull trout.

Objective: To ensure healthy aquatic and riparian habitats are maintained in and along streams with the potential for native fish re-introductions and restoration.

Exception: An exception may be granted after a site assessment is conducted and if the operator can demonstrate in a surface use plan of operations that adverse effects can be eliminated and activities would not affect potential habitat for native fish populations or degrade suitable habitat for native fish restoration/re-introduction. The following mitigation measures would apply:

c) No net increase in sediment over existing condition.

b) No adverse effects on water quality and quantity.

Modification: None.

Waiver: None.

RESOURCE: CLASS 1 FISHERIES

Stipulation: No Surface Occupancy. No activity allowed within ½ mile from centerline of Class 1 fishery streams (Blue Ribbon trout streams).

Objective: To ensure healthy aquatic habitat are maintained along Class 1 fisheries.

Exception: An exception may be granted if MFWP modifies the Class 1 fisheries rating. Application of the following mitigation measures apply:

a) No net increase in sediment over existing condition.

b) No adverse effects on water quality and quantity.

Modification: None.

Waiver: None.

RESOURCE: DEVELOPED RECREATION SITES

Stipulation: No Surface Occupancy. Surface occupancy and use is prohibited within ¼ mile of developed recreation sites, regardless of administering agency. Currently there are 49 developed BLM recreation sites: Beartooth Landing Rec Site, Bryant Creek Rec Site, Buffalo Hump Rec Site, Carbella Rec Site, Clark's Bay Rec Site, Crimson Bluff Rec Site, Crow Creek Rec Site, Departure Point Rec Site, Devil's Elbow Rec Site, Dickie Bridge Rec Site, Divide Bridge Campground, Divide Bridge Day Use, East Bank Rec Site, Four Corners OHV Trailhead, French Bar Rec Site, Galena Gulch Rec Site, Headlane Trailhead, Holter Lake Dam Rec Site, Holter Lake Rec Site, Jerry Creek Br Fishing Access, John G Mine Trailhead, Log Gulch Rec Site, Lombard Historical, Lower Toston Rec Site, Maiden Rock East, McMaster Hill East Trailhead, McMaster Hill West Trailhead, Moose Creek Trailhead, Ohio Gulch OHV Trailhead, Pintlar Creek Rec Site, Pipestone OHV Rec Site, Radersburg OHV Trailhead, Ringing Rocks Rec Site, Sawlog Creek Rec Site, Sawmill Gulch Trailhead, Sheep Camp Rec Site, Sheep Mountain Trailhead, Sleeping Giant Trailhead, Spokane Bay Rec Site, Spokane Bay Trailhead, Spokane Hills South, Titan Gulch Rec Site, Toston Dam Rec Site, Tumbleweed Lane Trailhead, Two Camps Vista, Ward Ranch Historical Site, Whiskey Gulch Trailhead, White Sandy Campground, Woodsiding Trailhead

Objective: To recognize and protect the public's opportunity for quality recreation experiences at those sites developed for that purpose. Since BLM recreation sites are generally developed to support the use of the surrounding lands, the ¼ mile buffer offers some protection for perpetuating those opportunities for which the site was developed, as well as protecting capital investments at the site.

Exception: An exception may be granted if a site is moved or eliminated.

Modification: The list of developed recreation sites may be modified if development is removed, or if a currently undeveloped site is developed in the future.

Waiver: A waiver may be granted if a site is moved or eliminated.

RESOURCE: SPECIAL RECREATION MANAGEMENT AREAS (SRMAS)

Stipulation: Controlled Surface Use. Operations within SRMAs must be conducted within a manner that minimizes encounters and conflicts with recreation users. Proposed activities may not alter or depreciate important recreational values located within the SRMA boundary. This would apply to the following Special Recreation Management Areas for this alternative: Holter Lake/Missouri River, Sleeping Giant, Hauser Lake/Lower Missouri River, Toston Reservoir/Missouri River, Scratchgravel Hills, Sheep Mountain, Pipestone, Upper Big Hole River, and Humbug Spires.

Objective: To prevent user conflicts and incompatible uses in areas with high recreational values and significant amounts of recreational activity.

Exception: An exception to this stipulation may be granted by the authorized officer if the operator submits a plan demonstrating the impacts to recreation values and recreation users are acceptable or can be adequately mitigated.

Modification: The area affected by this stipulation may be modified by the authorized officer if the boundaries of the SRMA are changed.

Waiver: None.

RESOURCE: CULTURAL AND PALEONTOLOGICAL RESOURCES

Stipulation: Controlled Surface Use. An inventory of the leased lands may be required prior to surface disturbance to determine if cultural resources or paleontological localities are present and to identify needed mitigation measures. Prior to undertaking any surface-disturbing activities on the lands covered by this lease, the lessee or operator shall:

1) Contact the Surface Management Agency (SMA) to determine if a cultural or paleontological resource inventory is required. If an inventory is required, then:
2) The SMA will complete the required inventory; or the lessee or operator, at their option, may engage the services of a cultural resource consultant acceptable to the SMA to conduct an inventory of the area of proposed surface disturbance. The operator may elect to inventory an area larger than the planned disturbance to cover possible site relocation, or for planning purposes.
3) Implement mitigation measures required by the SMA. Mitigation may include relocation of proposed lease-related activities or other protective measures such as data recovery and/or extensive recordation.
4) The SMA will consult with Native American tribes as per IM 2005 – 003.

The lessee or operator is required to bring to the attention of the field office manager any cultural resources or other objects of scientific interest discovered as a result of approved operations under the lease, and shall leave all discoveries intact and undisturbed until directed to proceed by the field office manager (16 U.S.C. 470).

Objective: Compliance with Section 106 of the National Historic Preservation Act is required for all actions which may affect cultural resources eligible for nomination to the National Register of Historic Places. Section 6 of the Oil and Gas Lease Terms (Form 3100-11) requires that operations be conducted in a manner that minimizes adverse impacts to cultural and other resources.

Exception: None.

Modification: None.

Waiver: None.

RESOURCE: NATIONAL REGISTER OF HISTORIC PROPERTIES ELIGIBLE PROPERTIES/DISTRICTS

Stipulation: No Surface Occupancy: Activity is prohibited within 300 ft. of site boundaries and/or districts eligible for, or listed on the National Register of Historic Places. There is one known district, the Indian Creek Historic Mining District (134 acres).

Objective: To avoid disturbance to and protect, significant properties, districts, and their setting.

Exception: An exception to this stipulation may be granted by the authorized officer if the lessee or operator submits a plan which demonstrates that the adverse impacts to cultural properties can be mitigated through data recovery and/or extensive recordation. Where impacts to cultural resources cannot be mitigated to the satisfaction of the Surface Management Agency, surface occupancy in that area must be prohibited.

Modification: No modification will be granted.

Waiver: No waiver will be granted.

RESOURCE: VRM CLASS II, III & IV AREAS

Stipulation: Controlled Surface Use. All surface disturbing activities and construction of semi-permanent and permanent facilities may require special design including location, painting, and camouflage to blend with the natural surroundings and meet the visual quality objectives for each respective class.

Objective: To control the visual impacts of activities and facilities within acceptable levels.

Exception: None.

Modification: None.

Waiver: None.

RESOURCE: WETLANDS, FLOODPLAINS, RIPARIAN AREAS, AND WATER QUALITY

Stipulation: No Surface Occupancy. Activity is prohibited within wetlands, floodplains, and riparian areas.
Objective: To maintain riparian/wetland functions and water quality.

Exception: An exception to this stipulation may be granted by the authorized officer if the operator submits a plan that demonstrates that impacts from the proposed action are minimal or can be adequately mitigated.

Modification: None.

Waiver: None.

RESOURCE: SPECIAL STATUS PLANT HABITATS

Stipulation: Controlled Surface Use. A field inspection will be conducted for special status plant species by the lessee prior to any surface disturbance. A list of special status plant species will be provided to the lessee at the time of the lease. Plant Species on the list are subject to change over time as new information becomes available. Plant inventories must be conducted at a time of year when the target species are identifiable. A report must be provided to the BLM documenting the presence or absence of special status plants in the area proposed for surface disturbance. The findings of this report may result in restrictions to the operator's plans or may preclude use and occupancy.

Objective: Protect and conserve rare plants, associated plant communities and the habitat that supports them.

Exception: An exception may be granted if BLM determines that the portion of the lease identified for surface disturbing activities does not support special status plant species or provide potential habitat for these species.

Modification: The boundaries of the area to be inventoried for special status plants may be modified if BLM determines that a large portion of the lease identified for surface disturbing activities doesn't support special status plant species or provide potential habitat for these species.

Waiver: The field inspection and plant inventory may be waived by the authorized if he/she determines that the subject lease occurs in an area with no known populations of special status plant species and that the area doesn't provide habitat for those species.

RESOURCE: KNOWN OR DISCOVERED SPECIAL STATUS PLANTS OR POPULATIONS

Stipulation: No Surface Occupancy. Surface occupancy and use is prohibited within 1/4 mile of special status plant species.

Objective: Protect and conserve rare plants, associated plant communities and the habitat that supports them.

Exception: None.

Modification: The boundaries of the no surface occupancy area may be modified if BLM determines that land within ¼ mile of the special status plant population does not provide potential habitat for these species.

Waiver: None.

RESOURCE: MUNICIPAL WATERSHEDS

Stipulation: No Surface Occupancy. Surface occupancy would be prohibited in the following municipal watersheds: Missouri River Siphon, Tenmile Creek Drainage, Big Hole River Intake, and Moulton Reservoir.

Objective: To protect drinking water for Municipalities within the Butte Field Office.

Exception: If the lessee can demonstrate that operations can occur on the lease without causing negative impacts to water quality at the intakes, an exception may be granted, if approved in writing by the authorized officer in consultation with the Field Office watershed specialist and the communities of Butte and Helena.

Modification: The boundaries of the stipulated area may be modified if the authorized officer determines that portions of the area can be occupied and operations will not cause water quality at intakes to fail to meet drinking water standards established by Montana Department of Environmental Quality (MDEQ).

Waiver: None

Resource: Areas or Active Mass Wasting, Unstable Land Areas, Slopes >30% on Non-Boulder Batholith Soils or Slopes >20% on Boulder Batholith Soils

Stipulation: Controlled Surface Use. Prior to surface disturbance on areas of active mass wasting, unstable land areas, or slopes greater than 30 on non-Boulder Batholith soils or 20 percent on Boulder Batholith soils, an engineering/reclamation plan must be approved by the authorized officer. Such plan must demonstrate how the following will be accomplished:

- Site productivity will be restored.
- Surface runoff will be adequately controlled.
- Off-site areas will be protected from accelerated soil erosion.
- Surface disturbing activities will not conducted during wet periods.

Objective: To maintain soil productivity and provide necessary protection to prevent excessive soil erosion on steep slopes.

Exceptions: An exception may be granted if the operator can demonstrate in a plan of operations that adverse effects can be minimized and activities safely conducted.

Modifications: The area affected by this stipulation may be modified by the authorized officer if it is determined that portions of area do not include slopes over 30 percent on non-Boulder Batholith soils or 20 percent on Boulder Batholith, or the operator can demonstrate in a plan of operations that adverse effects can be minimized.

Waiver: This stipulation may be waived by the authorized officer if it is determined that none of the leasehold contains slopes greater than 30 percent on non-Boulder Batholith soils or 20 percent on Boulder Batholith soils.

Resource: Continental Divide National Scenic Trail (Marysville)

Stipulation: No Surface Occupancy. Surface occupancy and use is prohibited within 1/2 mile of the Continental Divide National Scenic Trail.

Objective: To preserve and protect the existing scenic character of the landscape along the trail.

Exception: May be granted if this portion of the trail is relocated or if operator submits a plan that demonstrates that impacts to the area and the user experiences can be mitigated.

Modification: Modification may be granted should the trail be relocated or impacts of the action will not be noticed by users of the trail.

Waiver: May be granted if trail is moved from current location.

Resource: Designated National Historic Trails – Lewis and Clark Trail

Stipulation: No Surface Occupancy. Surface occupancy and use is prohibited within 1/2 mile of designated National Historic Trail.

Objective: To preserve and protect designated National Historic Trails and the natural setting in which they occur.

Exception: No exceptions will be granted unless the operator demonstrates through a submitted plan that impacts to the area and its users can be mitigated.

Modification: No modifications will be granted unless impacts of the action will not be apparent to user along the trail.

Waiver: May be granted if impacts can be mitigated so that area values and user experiences are not negatively affected.

Resource: Rivers Suitable for Wild and Scenic River Designation

Stipulation: No Surface Occupancy. Surface occupancy would be prohibited within ½ mile either side of the active river channel. This would apply to the following river segment lengths: 3.1 miles of the upper Missouri River and 2.6 miles of Muskrat Creek.

Objective: To protect river corridors and their Outstandingly Remarkable Values considered suitable for inclusion in the National Wild and Scenic Rivers system and the associated outstandingly remarkable values.

Exception: None.

Modification: None.

Waiver: None.

RESOURCE: RECREATION AND PUBLIC PURPOSES ACT LEASES AND PATENTS, AND 2920 AUTHORIZATIONS

Stipulation: No Surface Occupancy (NSO). Surface Occupancy and use is prohibited on Recreation & Public Purposes leases and patents and on leases and permits authorized under regulations found at 43 CFR 2920.

Objective: To protect developed facilities and commercial, recreational, and public uses and prevent incompatible uses on existing authorized areas.

Exception: An exception to this stipulation may be granted by the authorized officer if the operator submits a plan demonstrating that impacts from the proposed action are acceptable or can be adequately mitigated in coordination with the holder of the land use authorization.

Modification: The area affected by this stipulation may be modified by the authorized officer if land use authorization boundaries are modified.

Waiver: This stipulation may be waived by the authorized officer if land use authorization boundaries are modified.

ALTERNATIVE C OIL AND GAS STIPULATIONS

RESOURCE: GRIZZLY BEAR – RECOVERY ZONE

Stipulation: No Surface Occupancy. Activity is prohibited within the boundary of the Recovery Zone for grizzly bears.

Objective: To preclude surface disturbing activities in the Grizzly Bear Recovery Zone.

Exception: An exception will not be granted while the area is important to grizzly bear recovery or to its conservation following a change in legal status under the Endangered Species Act. Conditions for Exception require that the area is no longer classified as necessary for the recovery of the species.

Modification: This stipulation may be modified if a portion of the area is no longer important to grizzly bear recovery or to its conservation following a change in legal status under the Endangered Species Act. Conditions for Modification require that a portion of the area is no longer classified as necessary for the recovery of the species and is not considered important to it conservation.

Waiver: This stipulation will not be waived while the area is important to grizzly bear recovery or to its conservation following a change in legal status under the Endangered Species Act. Conditions for Waiver require that the area is no longer classified as necessary for the recovery or conservation of the species.

RESOURCE: GRIZZLY BEAR - DISTRIBUTION ZONE

Stipulation: No Surface Occupancy. Activity is prohibited in the boundary of the Distribution Zone for grizzly bears.

Objective: To preclude surface disturbing activities to denning habitat in the Grizzly Bear Distribution Zone.

Exception: An exception may be granted if it is determined that the animals have moved out of and are not using the general area during the particular year.

Modification: A modification of the stipulation may be granted if new habitat studies show that a portion of the area is not used by grizzly bear for denning.

Waiver: A waiver may be granted if new habitat studies in coordination with the Fish and Wildlife Service conclude that the area affected by this stipulation in not critical for grizzly bear denning.

RESOURCE: GRAY WOLF – FORMER NORTHWEST MONTANA RECOVERY AREA ENDANGERED POPULATION

Stipulation: No Surface Occupancy. Activity is prohibited within a 1 mile buffer around wolf dens or rendezvous sites in the former Northwest Montana Recovery Area. This stipulation would be applied to the former Northwest Montana Recovery Area (94,700 acres) but there are no known den or rendezvous sites currently mapped in this area.

Objective: To preclude surface disturbing activities in wolf denning or rendezvous areas in the Northwest Montana Recovery Area which could cause increased stress and/or displacement of animals.

Exception: An exception may be granted if it is determined that the animals have moved out of and are not using the general area during the particular year.

Modification: A modification of the stipulation may be granted if new habitat studies show that a portion of the area is not used by grizzly bear for denning.

Waiver: A waiver may be granted if new habitat studies in coordination with the Fish and Wildlife Service conclude that the area affected by this stipulation in not critical for grizzly bear denning.

RESOURCE: PRAIRIE DOG TOWNS

Stipulation: No lease within the boundary of any prairie dog town.

Objective: To protect habitat for prairie dog towns.

Exception: None.

Modification: None.

Waiver: None.

RESOURCE: SAGE GROUSE WINTER/SPRING RANGE

Stipulation: No Lease

Objective: To protect sage grouse winter range from disturbance during the winter/spring season, and to facilitate long-term maintenance of wildlife populations.

Exception: None

Modification: None

Waiver: None

RESOURCE: SAGE GROUSE STRUTTING GROUNDS (LEKS)

Stipulation: No lease within 1/2 mile of sage grouse leks.

Objective: To protect sage grouse strutting grounds and leks to maintain regional sage grouse populations.

Exception: None

Modification: None

Waiver: None

RESOURCE: SAGE GROUSE BREEDING HABITAT

Stipulation: No Surface Occupancy. Surface occupancy land use is prohibited in sage grouse nesting and early-brook rearing habitat (defined as within 3 miles of leks).

Objective: To protect sage grouse leks and breeding habitat necessary for long-term maintenance of regional sage grouse populations.

Exception: An exception to this stipulation may be granted by the authorized officer if the operator submits a plan that demonstrates that impacts from the proposed action are minimal or can be adequately mitigated.

Modification: The boundaries of the stipulated area may be modified if the authorized officer determines that portions of the area can be occupied without adversely affecting sage grouse leks.

Waiver: This stipulation may be waived if the authorized officer, in consultation with MFWP and the USFWS, determines that the entire leasehold can be occupied without adversely affecting sage grouse leks or the surrounding breeding habitat.

RESOURCE: WILDLIFE MANAGEMENT AREAS

Stipulation: No Lease

Objective: To protect MFWP elk winter range necessary for long-term maintenance of regional elk populations and other wildlife values.

Exception: None.

Modification: None.

Waiver: None.

RESOURCE: BIG GAME WINTER/SPRING RANGE

Stipulation: No Lease

Objective: To protect mule deer, elk, antelope, and moose winter/spring range from disturbance during the winter/spring season, and to facilitate long-term maintenance of wildlife populations.

Exception: None

Modification: None

Waiver: None

RESOURCE: ELK CALVING/BIG GAME BIRTHING AREAS

Stipulation: No Lease

Objective: To protect mule deer, elk, antelope, and moose birthing areas from disturbance and facilitate long-term maintenance of wildlife populations.

Exception: None

Modification: None

Waiver: None

RESOURCE: BIGHORN SHEEP YEARLONG RANGE (INCLUDING CORE AREAS)

Stipulation: No Lease

Objective: To protect bighorn rutting, winter and lambing habitat from disturbance and facilitate long-term maintenance of bighorn sheep populations.

Exception: None

Modification: None

Waiver: None.

RESOURCE: BALD EAGLE NEST SITES/BREEDING HABITAT

Stipulation: No Lease. No lease is allowed in a one mile radius around bald eagle nest sites.

Objective: To protect bald eagle nesting sites and/or breeding habitat in accordance with the Montana Bald Eagle Management Plan.

Exception: None

Modification: None.

Waiver: None

RESOURCE: RAPTOR BREEDING TERRITORIES (GOLDEN EAGLE, PRAIRIE FALCON, SWAINSON'S HAWK)

Stipulation: No Lease within 1/2 mile of raptor nest sites which have been active within the past five years.

Objective: To protect reproductive potential of breeding habitat for special status raptors.

Exception: None.

Modification: None.

Waiver: None.

RESOURCE: PEREGRINE FALCON NEST SITES/BREEDING HABITAT

Stipulation: No Lease within one mile of peregrine falcon nest sites.

Objective: To protect peregrine falcon nesting sites and/or breeding habitat.

Exception: None.

Modification: None.

Waiver: None.

RESOURCE: FERRUGINOUS HAWKS

Stipulation: No Lease within 1/2 mile of ferruginous hawk nest sites that have been active in the past 5 years.

Objective: To maintain the reproductive potential of ferruginous hawk nest sites.

Exception: None.

Modification: None.

Waiver: None.

RESOURCE: FERRUGINOUS HAWK BREEDING TERRITORIES

Stipulation: Timing Limitation. No activity is permitted from March 1 to August 31 within one mile of hawk nest sites that have been active within the past five years. This stipulation does not apply to the operation and maintenance of production facilities unless the findings of analysis demonstrate the continued need for such mitigation and that less stringent, project-specific mitigation measures would be insufficient.

Objective: To protect reproductive potential of breeding habitat for special status raptors.

Exception: An exception to this stipulation may be granted by the authorized officer of the operator submits a plan that demonstrates the impacts from the proposed action are minimal or can be adequately mitigated.

Modification: The boundaries of the stipulated area may be modified if the authorized officer determines that portions of the area no longer are within one mile of raptor nest sites. The dates for the timing restriction may be modified if new information indicates that the dates are not valid for the leasehold.

Waiver: This stipulation may be waived if the authorized officer determines that the entire leasehold no longer is within one mile of ferruginous nest sites.

RESOURCE: THREATENED, ENDANGERED, AND SPECIAL STATUS SPECIES

Stipulation: Controlled Surface Use. The lease area may now or hereafter contain plants, animals, or their habitats determined to be threatened, endangered, or other special status species. BLM may recommend modifications to exploration and development proposals to further its conservation and management objective to avoid BLM-approved activity that will contribute to a need to list such a species or their habitat. BLM may require modifications to or disapprove proposed activity that is likely to result in jeopardy to the continued existence of a proposed or listed threatened or endangered species or result in the destruction or adverse modification of a designated or proposed critical habitat. BLM will not approve any ground-disturbing activity that may affect any such species or requirements of the Endangered Species Act as amended, 16 U.S.C. § 1531 et seq., including completion of any required procedure for conference or consultation.

Objective: Avoid BLM-approved activity that will contribute to a need to list a species or their habitat as threatened or endangered.

Exception: None.

Modification: None.

Waiver: None.

RESOURCE: WESTSLOPE CUTTHROAT TROUT HABITAT (90-99% PURE)

Stipulation: No Surface Occupancy. No activity allowed within 1/2 mile from centerline of stream containing known populations of 90-99% genetically pure westslope cutthroat trout.

Objective: To ensure healthy aquatic habitat exists in drainages important to the viability of Upper Missouri River and Columbia River Basins Westslope Cutthroat Trout.

Exception: An exception may be granted after a site assessment is conducted and if the operator can demonstrate in a surface use plan of operations that adverse effects can be eliminated and activities would not affect sensitive trout populations. Apply the following mitigation measures:

a) No net increase in sediment over existing condition.

b) No adverse effects on water quality and quantity.

Modification: None.

Waiver: A waiver may be granted if the MFWP determines the stream is no longer considered important to the viability of the species.

RESOURCE: WESTSLOPE CUTTHROAT TROUT HABITAT (99-100% PURE)

Stipulation: No Lease within ½ mile from centerline of stream containing known populations of 99-100% genetically pure westslope cutthroat trout.

Objective: To prevent sensitive aquatic habitat and trout populations from being impacted.

Exception: None.

Modifications: None.

Waiver: None.

RESOURCE: FLUVIAL AND ADFLUVIAL ARCTIC GRAYLING HABITAT

Stipulation: No Surface Occupancy. No activity allowed within 1/2 mile from centerline of stream containing known populations of Arctic grayling.

Objective: To ensure healthy aquatic habitat exists along rivers and tributaries important to the viability of fluvial and adfluvial Arctic grayling.

Exception: An exception may be granted after a site assessment is conducted and if the operator can demonstrate in a surface use plan of operations that adverse effects can be eliminated and activities would not affect sensitive Arctic grayling populations. The following mitigation measures would apply:

a) No net increase in sediment over existing condition.

b) No adverse effects on water quality and quantity.

Modification: None.

Waiver: A waiver may be granted if the MFWP and the USFWS determines the stream is no longer considered important to the viability of the species.

RESOURCE: BULL TROUT

Stipulation: No Surface Occupancy. No activity allowed within 1 mile from centerline of streams containing known populations of bull trout.

Objective: To ensure healthy aquatic habitat exists in drainages important to the viability of bull trout.

Exception: An exception may be granted after a site assessment is conducted and if the operator can demonstrate in a surface use plan of operations that adverse effects can be eliminated and activities would not affect sensitive trout populations. Apply the following mitigation measures:

a) No net increase in sediment over existing condition.

b) No adverse effects on water quality and quantity.

Modification: None.

Waiver: A waiver may be granted if the MFWP and the USFWS determines the stream is no longer considered important to the viability of the species.

RESOURCE: YELLOWSTONE CUTTHROAT (90-100% PURE)

Stipulation: No Lease within 1/2 mile from centerline of streams containing known populations of 90-100% genetically pure Yellowstone cutthroat trout.

Objective: To ensure healthy aquatic habitat exists in drainages important to the viability of Yellowstone Cutthroat.

Exception: None.

Modification: None.

Waiver: None

RESOURCE: CLASS 1 FISHERIES

Stipulation: No Surface Occupancy. No activity allowed within 1 mile from the centerline of Class 1 fishery streams (Blue Ribbon trout streams).

Objective: To ensure healthy aquatic habitat are maintained along Class 1 fisheries.

Exception: An exception may be granted if MFWP modifies the Class 1 fisheries rating. Application of the following mitigation measures apply:

a) No net increase in sediment over existing condition.

b) No adverse effects on water quality and quantity.

Modification: None.

Waiver: None.

Resource: Developed Recreation Sites

Stipulation: No Surface Occupancy. Surface occupancy and use is prohibited within ½ mile of the boundaries of developed recreation sites, regardless of administering agency. There currently 49 developed BLM recreation sites: Beartooth Landing Rec Site, Bryant Creek Rec Site, Buffalo Hump Rec Site, Carbella Rec Site, Clark's Bay Rec Site, Crimson Bluff Rec Site, Crow Creek Rec Site, Departure Point Rec Site, Devil's Elbow Rec Site, Dickie Bridge Rec Site, Divide Bridge Campground, Divide Bridge Day Use, East Bank Rec Site, Four Corners OHV Trailhead, French Bar Rec Site, Galena Gulch Rec Site, Headlane Trailhead, Holter Lake Dam Rec Site, Holter Lake Rec Site, Jerry Creek Br Fishing Access, John G Mine Trailhead, Log Gulch Rec Site, Lombard Historical, Lower Toston Rec Site, Maiden Rock East, McMaster Hill East Trailhead, McMaster Hill West Trailhead, Moose Creek Trailhead, Ohio Gulch OHV Trailhead, Pintlar Creek Rec Site, Pipestone OHV Rec Site, Radersburg OHV Trailhead, Ringing Rocks Rec Site, Sawlog Creek Rec Site, Sawmill Gulch Trailhead, Sheep Camp Rec Site, Sheep Mountain Trailhead, Sleeping Giant Trailhead, Spokane Bay Rec Site, Spokane Bay Trailhead, Spokane Hills South, Titan Gulch Rec Site, Toston Dam Rec Site, Tumbleweed Lane Trailhead, Two Camps Vista, Ward Ranch Historical Site, Whiskey Gulch Trailhead, White Sandy Campground, Woodsiding Trailhead.

Objective: To recognize and protect the public's opportunity for quality recreation experiences at those sites developed for that purpose. Since BLM recreation sites are generally developed to support the use of the surrounding lands, the 1/2 mile buffer offers some protection for perpetuating those opportunities for which the site was developed, as well as protecting capital investments at the site.

Exception: An exception may be granted if a site is moved or eliminated.

Modification: The list of developed recreation sites may be modified if development is removed, or if a currently undeveloped site is developed in the future.

Waiver: A waiver may be granted if a site is moved or eliminated.

Resource: Special Recreation Management Areas (SRMAs)

Stipulation: No Surface Occupancy. Activity is prohibited within the boundaries of areas designated as SRMAs. This applies to the following SRMAs in this alternative: Holter Lake/Missouri River, Sleeping Giant, Hauser Lake/Lower Missouri River, Toston Reservoir/Missouri River, Scratchgravel Hills, Sheep Mountain, Pipestone, Upper Big Hole River, and Humbug Spires.

Objective: To prevent user conflicts and incompatible uses in areas with high recreational values and significant amounts of recreational activity.

Exception: An exception to this stipulation may be granted by the authorized officer if the operator submits a plan demonstrating the impacts to recreation values and recreation users are acceptable or can be adequately mitigated.

Modification: The area affected by this stipulation may be modified by the authorized officer if the boundaries of the SRMA are changed.

Waiver: None.

Resource: Cultural and Paleontological Resources

Stipulation: Controlled Surface Use. An inventory of the leased lands may be required prior to surface disturbance to determine if cultural resources or paleontological localities are present and to identify needed mitigation measures. Prior to undertaking any surface-disturbing activities on the lands covered by this lease, the lessee or operator shall:

1) Contact the Surface Management Agency (SMA) to determine if a cultural or paleontological resource inventory is required. If an inventory is required, then;

2) The SMA will complete the required inventory; or the lessee or operator, at their option, may engage the services of a cultural resource consultant acceptable to the SMA to conduct an inventory of the area of proposed surface disturbance. The operator may elect to inventory an area larger than the planned disturbance to cover possible site relocation, or for planning purposes.

3) Implement mitigation measures required by the SMA. Mitigation may include the relocation of proposed lease-related activities or other protective measures such as data recovery and/or extensive recordation.

4) The SMA will consult with Native American tribes as per IM 2005 – 003.

The lessee or operator is required to bring to the attention of the field office manager any cultural resources or other objects of scientific interest discovered as a result of approved operations under the lease, and shall leave all discoveries intact and undisturbed until directed to proceed by the field office manager (16 U.S.C. 470).

Objective: Compliance with Section 106 of the National Historic Preservation Act is required for all actions which may affect cultural resources eligible for nomination to the National Register of Historic Places. Section 6 of the Oil and Gas Lease Terms (Form 3100-

11) requires that operations be conducted in a manner that minimizes adverse impacts to cultural and other resources.

Exception: None.

Modification: None.

Waiver: None.

RESOURCE: NATIONAL REGISTER OF HISTORIC PROPERTIES ELIGIBLE PROPERTIES/DISTRICTS

Stipulation: No Surface Occupancy: Activity is prohibited within 300 feet of site boundaries and/or districts eligible for, or listed on the National Register of Historic Places. There is one known district, the Indian Creek Historic Mining District (134 acres).

Objective: To avoid disturbance to and protect, significant properties, districts, and their settings.

Exception: An exception to this stipulation may be granted by the authorized officer if the lessee or operator submits a plan which demonstrates that the adverse impacts to cultural properties can be mitigated through data recovery and/or extensive recordation. Where impacts to cultural resources cannot be mitigated to the satisfaction of the SMA, surface occupancy in that area must be prohibited.

Modification: No modification will be granted.

Waiver: No waiver will be granted.

RESOURCE: TRADITIONAL CULTURAL PROPERTIES

Stipulation: No Surface Occupancy: Activity is prohibited within ½ mile, or line-of-site of the identified Traditional Cultural Property (TCP), whichever criterion protects the viewshed of that property.

Objective: To avoid disturbance and protect cultural properties determined to be of particular importance to Native American Groups, determined to be Traditional Cultural Properties, and/or designated to be for traditional use.

Exception: An exception to this stipulation may be granted by the authorized officer if the Indian community no longer attaches those traditional values to the lease area.

Modification: No modification will be granted.

Waiver: No waiver will be granted.

RESOURCE: VRM CLASS II, III & IV

Stipulation: Controlled Surface Use. All surface disturbing activities and construction of semi-permanent facilities and permanent facilities may require special design including location, painting, and camouflage to blend with the natural surroundings and meet the visual quality objectives for respective class.

Objective: To control the visual impacts of activities and facilities within acceptable levels.

Exception: None.

Modification: None.

Waiver: None.

RESOURCE: WETLANDS, FLOODPLAINS, RIPARIAN AREAS, AND WATER QUALITY

Stipulation: No Surface Occupancy. Activity is prohibited within wetlands, floodplains, and riparian areas.

Objective: To maintain riparian/wetland functions and water quality.

Exception: An exception to this stipulation may be granted by the authorized officer if the operator submits a plan that demonstrates that impacts from the proposed action are minimal or can be adequately mitigated.

Modification: None.

Waiver: None.

RESOURCE: SPECIAL STATUS PLANT HABITATS

Stipulation: Controlled Surface Use. A field inspection will be conducted for special status plant species by the lessee prior to any surface disturbance. A list of special status plant species will be provided to the lessee at the time of the lease. Plant Species on the list are subject to change over time as new information becomes available. Plant inventories must be conducted at a time of year when the target species are identifiable. A report must be provided to the BLM documenting the presence or absence of special status plants in the area proposed for surface disturbance. The findings of this report may result in restrictions to the operator's plans or may preclude use and occupancy.

Objective: Protect and conserve rare plants, associated plant communities and the habitat that supports them.

Exception: An exception may be granted if BLM determines that the portion of the lease identified for surface disturbing activities does not support special status plant species or provide potential habitat for these species.

Modification: The boundaries of the area to be inventoried for special status plants may be modified if BLM determines that a large portion of the lease identified for surface disturbing activities doesn't support special status plant species or provide potential habitat for these species.

Waiver: The field inspection and plant inventory may be waived by the authorized if he/she determines that the subject lease occurs in an area with no known populations of special status plant species and that the area doesn't provide habitat for those species.

RESOURCE: KNOWN OR DISCOVERED SPECIAL STATUS PLANTS OR POPULATIONS

Stipulation: No Surface Occupancy. Surface occupancy and use is prohibited within ½ mile of special status plant species.

Objective: Protect and conserve rare plants, associated plant communities and the habitat that supports them.

Exception: None.

Modification: The boundaries of the no surface occupancy area may be modified if BLM determines that land within ½ mile of the special status plant population does not provide potential habitat for these species.

Waiver: None.

RESOURCE: MUNICIPAL WATERSHEDS

Stipulation: No Lease. No leases would be allowed within the following municipal watersheds: Missouri River Siphon, Tenmile Creek Drainage, Big Hole River Intake, and Moulton Reservoir.

Objective: To protect drinking water for Municipalities within the Butte Field Office.

Exception: None.

Modification: None.

Waiver: None.

RESOURCE: AREAS OF ACTIVE MASS WASTING, UNSTABLE LAND AREAS, SLOPES >30% ON NON-BOULDER BATHOLITH SOILS OR SLOPES >20% ON BOULDER BATHOLITH SOILS

Stipulation: Controlled Surface Use. Prior to surface disturbance on areas of active mass wasting, unstable land areas, slopes greater than 30 on non-Boulder Batholith soils or 20 percent on Boulder Batholith soils, an engineering/reclamation plan must be approved by the authorized officer. Such plan must demonstrate how the following will be accomplished:

- Site productivity will be restored.
- Surface runoff will be adequately controlled.
- Off-site areas will be protected from accelerated soil erosion.
- Surface disturbing activities will not be conducted during extended wet periods.

Objective: To maintain soil productivity and provide necessary protection to prevent excessive soil erosion on steep slopes.

Exceptions: An exception may be granted if the operator can demonstrate in a plan of operations that adverse effects can be minimized and activities safely conducted.

Modifications: The area affected by this stipulation may be modified by the authorized officer if it is determined that portions of area do not include slopes over 30 percent on non-Boulder Batholith soils or 20 percent on Boulder Batholith, or the operator can demonstrate in a plan of operations that adverse effects can be minimized.

Waiver: This stipulation may be waived by the authorized officer if it is determined that none of the leasehold contains slopes greater than 30 percent on non-Boulder Batholith soils or 20 percent on Boulder Batholith soils.

RESOURCE: DESIGNATED NATIONAL HISTORIC TRAILS – LEWIS AND CLARK TRAIL

Stipulation: No Surface Occupancy. Surface occupancy and use is prohibited within 1 mile of designated National Historic Trail.

Objective: To preserve and protect designated National Historic Trails and the natural setting in which they occur.

Exception: No exceptions will be granted.

Modification: No modifications will be granted.

Waiver: No waivers will be granted.

RESOURCE: CONTINENTAL DIVIDE NATIONAL SCENIC TRAIL (MARYSVILLE)

Stipulation: No Surface Occupancy. Surface occupancy and use is prohibited within 1/2 mile of the Continental Divide National Scenic Trail.

Objective: To preserve and protect the existing scenic character of the landscape along the trail.

Exception: May be granted if this portion of the trail is relocated.

Modification: Modification may be granted should the trail be relocated.

Waiver: May be granted if trail is moved from current location.

RESOURCE: RIVERS SUITABLE FOR WILD AND SCENIC RIVER DESIGNATION

Stipulation: No Surface Occupancy. Activity would be prohibited within 1 mile either side of the active river channel. This stipulation would apply to the following stream/river segment lengths: 2.3 miles of the upper Big Hole River, 3.1 miles of the upper Missouri River, 4.0 miles of Moose Creek, and 2.6 miles of Muskrat Creek.

Objective: To protect river corridors considered suitable for inclusion in the National Wild and Scenic Rivers system and the associated outstandingly remarkable values.

Exception: None

Modification: None

Waiver: None

RESOURCE: RECREATION AND PUBLIC PURPOSES ACT LEASES AND PATENTS, AND 2920 AUTHORIZATIONS

Stipulation: No Surface Occupancy (NSO). Surface Occupancy and use is prohibited on Recreation & Public Purposes leases and patents and on leases and permits authorized under regulations found at 43 CFR 2920.

Objective: To protect developed facilities and commercial, recreational, and public uses and prevent incompatible uses on existing authorized areas.

Exception: An exception to this stipulation may be granted by the authorized officer if the operator submits a plan demonstrating that impacts from the proposed action are acceptable or can be adequately mitigated in coordination with the holder of the land use authorization.

Modification: The area affected by this stipulation may be modified by the authorized officer if land use authorization boundaries are modified.

Waiver: This stipulation may be waived by the authorized officer if land use authorization boundaries are modified.

ALTERNATIVE D OIL AND GAS STIPULATIONS

RESOURCE: GRIZZLY BEAR – RECOVERY ZONE

Stipulation: Controlled Surface Use. Activities may be relocated, require special design, or require on and off site mitigation measures to prevent impacts to grizzly bear populations and habitat located in the grizzly bear recovery zones.

Objective: 1) To ensure that proposed activities do not adversely affect the viability of grizzly bear, operations will be designed, including limiting noise levels and /or located so as to not adversely affect the viability of grizzly bear. 2) To restrict the timing or type of activities on roads, if needed to control human-animal conflicts or disturbances. 3) To require coordination of timing and timing adjustments of activities within grizzly bear recovery zones to avoid or minimize the potential for adverse effects to grizzly bear because of cumulative impacts from oil and gas activities, plus other activities within the area. This stipulation may limit the extent of field development.

Exception: An exemption may be granted if the operator demonstrates in a plan of operations that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: None.

Waiver: A waiver may be granted if new habitat studies in coordination with MFWP and the USFWS conclude that the area affected by this stipulation is not in grizzly bear occupied habitat.

RESOURCE: GRIZZLY BEAR - DISTRIBUTION ZONE

Stipulation: Controlled Surface Use. Activities may be relocated, require special design, or require on and off site mitigation measures to prevent impacts to grizzly bear populations and habitat located in the grizzly bear distribution zone.

Objective: 1) To ensure that proposed activities do not adversely affect the viability of grizzly bear, operations will be designed, including limiting noise levels and /or located so as to not adversely affect the viability of grizzly bear. 2) To restrict the timing or type of activities on roads, if needed to control human-animal conflicts or disturbances. 3) To require coordination of timing and timing adjustments of activities within grizzly bear distribution zones to avoid or minimize the potential for adverse effects to grizzly bear because of cumulative impacts from oil and gas activities, plus other activities within the area. This stipulation may limit the extent of field development.

Exception: An exemption may be granted if the operator demonstrates in a plan of operations that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: None.

Waiver: A waiver may be granted if new habitat studies in coordination with MFWP and the USFWS conclude that the area affected by this stipulation is not in grizzly bear occupied habitat.

RESOURCE: GRAY WOLF – FORMER NORTHWEST MONTANA RECOVERY AREA ENDANGERED POPULATION

Stipulation: Controlled Surface Use. Activities may be relocated, require special design, or require on and off site mitigation measures to prevent impacts to gray wolf populations and habitat located in the gray wolf former Northwest Montana Recovery Area.

Objective: 1) To ensure that proposed activities do not adversely affect the viability of gray wolf, operations will be designed, including limiting noise levels and /or located so as to not adversely affect the viability of gray wolf. 2) To restrict the timing or type of activities on roads, if needed to control human-animal conflicts or disturbances. 3) To require coordination of timing and timing adjustments of activities within the gray wolf former Northwest Montana Recovery Area to avoid or minimize the potential for adverse effects to gray wolf because of cumulative impacts from oil and gas activities, plus other activities within the area. This stipulation may limit the extent of field development.

Exception: An exemption may be granted if the operator demonstrates in a plan of operations that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: None.

Waiver: A waiver may be granted if new habitat studies in coordination with MFWP and the USFWS conclude that the area affected by this stipulation is not in gray wolf occupied habitat.

RESOURCE: PRAIRIE DOG TOWNS

Stipulation: No Surface Occupancy. Activity is prohibited within the boundary of any prairie dog town.

Objective: To protect habitat for prairie dog towns.

Exception: An exception to this stipulation may be granted by the authorized officer if the operator submits a plan which demonstrates that impacts from the proposed action are minimal or can be adequately mitigated.

Modification: The boundaries of the stipulated area may be modified if the authorized officer determines that portions of the area can be occupied without adversely affecting prairie dogs.

Waiver: This stipulation may be waived if the authorized officer, in consultation with MFWP and USFWS, determines that the entire leasehold no longer contains prairie dogs.

RESOURCE: SAGE GROUSE WINTER/SPRING RANGE

Stipulation: Timing Limitation. No activity from December 1 through May 15. This stipulation does not apply to the operation and maintenance of production facilities unless the findings of analysis demonstrate the continued need for such mitigation and that less stringent, project-specific mitigation measures would be insufficient.

Objective: To protect sage grouse winter range from disturbance during the winter/spring season, and to facilitate long-term maintenance of wildlife populations.

Exception: An exception to this stipulation may be granted by the authorized officer in consultation with MFWP and the USFWS, if the operator submits a plan that demonstrates that impacts from the proposed action are minimal or can be adequately mitigated.

Modification: The boundaries of the stipulated area may be modified if the authorized officer determines that portions of the area no longer contain sage grouse winter/spring range. The dates for the timing restriction may be modified if new information indicates that the December 1 through May 15 dates are not valid for the leasehold.

Waiver: This stipulation may be waived if the authorized officer determines that the entire leasehold no longer contains sage grouse winter/spring range, or if in coordination with MFWP and the USFWS, determines that the area is not critical for sage grouse.

RESOURCE: SAGE GROUSE STRUTTING GROUNDS (LEKS)

Stipulation: No Surface Occupancy. Activity is prohibited within 1/4 mile of sage grouse leks.

Objective: To protect sage grouse strutting grounds and leks to maintain regional sage grouse populations.

Exception: An exception to this stipulated area may be modified if the authorized officer determines that portions of the area can be occupied without adversely affecting sage grouse leks.

Modification: The boundaries of the stipulated area may be modified if the authorized officer determines that portions of the area can be occupied without adversely affecting sage grouse leks.

Waiver: The stipulation may be waived if the authorized officer, in consultation with MFWP and the USFWS, determines that the entire leasehold can be occupied without adversely affecting sage grouse leks.

RESOURCE: SAGE GROUSE BREEDING HABITAT

Stipulation: Timing Limitation. Activity is restricted from March 1 through June 30 in nesting and early brood rearing habitat (defined as within three miles of leks). This stipulation does not apply to the operation and maintenance of production facilities unless the findings of analysis demonstrate the continued need for such mitigation and that less stringent, project-specific mitigation measures would be insufficient.

Objective: To protect sage grouse leks and breeding habitat necessary for long-term maintenance of regional sage grouse populations.

Exception: An exception to this stipulation may be granted by the authorized officer if the operator submits a plan that demonstrates that impacts from the proposed action are minimal or can be adequately mitigated.

Modification: The boundaries of the stipulated area may be modified if the authorized officer determines that portions of the area can be occupied without adversely affecting sage grouse leks.

Waiver: This stipulation may be waived if the authorized officer, in consultation with MFWP, determines that the entire leasehold can be occupied without adversely affecting sage grouse leks or the surrounding breeding habitat.

RESOURCE: WILDLIFE MANAGEMENT AREAS

Stipulation: No Surface Occupancy. Activity is prohibited within the boundary of State Game Ranges administered by MFWP.

Objective: To protect MFWP elk winter range necessary for long-term maintenance of regional elk populations and other wildlife values.

Exception: None.

Modification: None.

Waiver: None.

RESOURCE: BIG GAME WINTER/SPRING RANGE

Stipulation: Timing Limitation. No activity from December 1 through May 15 within winter range for wildlife. This stipulation does not apply to the operation and maintenance of production facilities unless the findings of analysis demonstrate the continued need for such mitigation and that less stringent, project-specific mitigation measures would be insufficient.

Objective: To protect mule deer, elk, antelope, and moose winter/spring range from disturbance during the winter/spring season, and to facilitate long-term maintenance of wildlife populations.

Exception: An exception to this stipulation may be granted by the authorized officer in consultation with MFWP, if the operator submits a plan that demonstrates that impacts from the proposed action are minimal or can be adequately mitigated.

Modification: The boundaries of the stipulated area may be modified if the authorized officer, in consultation with MFWP, determines that portions of the area no longer contain wildlife winter/spring range. The dates for the timing restriction may be modified if new wildlife use information indicates that the December 1 through May 15 dates are not valid for the leasehold.

Waiver: This stipulation may be waived if the authorized officer, in consultation with MFWP, determines that the entire leasehold no longer contains winter/spring range for wildlife.

RESOURCE: BIGHORN SHEEP YEARLONG RANGE

Stipulation: Timing Limitation. Activity is prohibited from November 1 through June 30 in bighorn rutting, winter and lambing habitat. This stipulation does not apply to the operation and maintenance of production facilities unless the findings of analysis demonstrate the continued need for such mitigation and that less stringent, project-specific mitigation measures would be insufficient.

Objective: To protect bighorn rutting, winter and lambing habitat from disturbance and facilitate long-term maintenance of bighorn sheep populations.

Exception: An exception to this stipulation may be granted by the authorized officer if the operator submits a plan that demonstrates that impacts from the proposed action are minimal or can be adequately mitigated.

Modification: The boundaries of the stipulated area may be modified if the authorized officer determines that portions of the area no longer contain rutting, winter, and lambing habitat for bighorn sheep. The dates for the timing restriction may be modified if new wildlife use information indicates that the dates are not valid for the leasehold.

Waiver: This stipulation may be waived if the authorized officer, in consultation with MFWP, determines that the entire leasehold no longer contains bighorn sheep rutting, winter or lambing areas.

RESOURCE: BALD EAGLE NEST SITES/BREEDING HABITAT

Stipulation: No Surface Occupancy. Activity is prohibited within 1/2 mile of bald eagle nest sites and within bald eagle nesting habitat in riparian areas.

Objective: To protect bald eagle nesting sites and/or breeding habitat in accordance with the Montana Bald Eagle Management Plan.

Exception: An exception may be granted by the authorized officer if the operator submits a plan which demonstrates that the proposed action will not affect the bald eagle or its habitat. If the authorized officer determines that the action may have an adverse affect, the operator may submit a plan demonstrating that the impacts can be adequately mitigated. This plan must be approved by BLM in consultation with the USFWS.

Modification: The boundaries of the stipulated area may be modified if the authorized officer, in consultation with USFWS, determines that the area can be occupied without adversely affecting bald eagle nest sites or nesting habitats.

Waiver: This stipulation may be waived if the authorized officer, in consultation with USFWS, determines that the entire leasehold can be occupied without adversely affecting bald eagle nest sites or nesting habitat.

RESOURCE: BALD EAGLE NEST SITES/BREEDING HABITAT

Stipulation: Timing Limitation. No activity is allowed from February 1 through August 31 in a one mile radius around bald eagle nest sites. This stipulation does not apply to the operation and maintenance of production facilities unless the findings of analysis demonstrate the continued need for such mitigation and that less stringent, project-specific mitigation measures would be insufficient.

Objective: To protect bald eagle nesting site and/or breeding habitat in accordance with the Montana Bald Eagle Management Plan.

Exception: An exception may be granted by the authorized officer if the operator submits a plan which demonstrates that the proposed action will not affect the bald eagle or its habitat. If the authorized officer determines that the action may have an adverse affect, the operator may submit a plan demonstrating that the impacts can be adequately mitigated. This plan must be approved by BLM in consultation with the USFWS.

Modification: A modification may be granted if new habitat studies show that a portion of the area is not used by eagles.

Waiver: This stipulation may be waived if the authorized officer, in consultation with USFWS, determines that the entire leasehold can be occupied without adversely affecting bald eagle nest sites or nesting habitat.

RESOURCE: PEREGRINE FALCON NEST SITES/BREEDING HABITAT

Stipulation: No Surface Occupancy. Activity is prohibited within one mile of peregrine falcon nest sites.

Objective: To protect peregrine falcon nesting sites and/or breeding habitat.

Exception: An exception may be granted by the authorized officer if the operator submits a plan that demonstrates that the proposed action will not affect the peregrine falcon or its habitat. If the authorized officer determines that the action may have an adverse affect, the operator may submit a plan demonstrating that the impacts can be adequately mitigated. This plan must be approved by BLM in consultation with USFWS.

Modification: The boundaries of the stipulated area may be modified if the authorized officer, in consultation with USFWS, determines that portions of the area can be occupied without adversely affecting peregrine falcon nest sites or breeding habitat.

Waiver: This stipulation may be waived if the authorized officer, in consultation with USFWS, determines that the entire leasehold can be occupied without adversely affecting peregrine falcon nest sites or breeding habitat.

RESOURCE: FERRUGINOUS HAWK BREEDING TERRITORIES

Stipulation: Timing Limitation. No activity is allowed from March 1 through July 31 within 1/2 mile of ferruginous hawk nest sites that have been active within the past 5 years. This stipulation does not apply to the operation and maintenance of production facilities unless the findings of analysis demonstrate the continued need for such mitigation and that less stringent, project-specific mitigation measures would be insufficient.

Objective: To maintain the reproductive potential of ferruginous hawk nest sites.

Exception: An exception to this stipulation may be granted by the authorized officer if the operator submits a plan that demonstrated that the impacts from the proposed action are minimal or can be adequately mitigated.

Modification: The boundaries of the stipulated area may be modified if the authorized officer determines that portions of the area can be occupied without adversely affecting the production potential of ferruginous hawk nest sites.

Waiver: This stipulation may be waived if the authorized officer determines that the entire leasehold can be occupied without adversely affecting the production potential of ferruginous hawk nest sites.

RESOURCE: THREATENED, ENDANGERED, AND SPECIAL STATUS SPECIES

Stipulation: Controlled Surface Use. The lease area may now or hereafter contain plants, animals, or their habitats determined to be threatened, endangered, or other special status species. BLM may recommend modifications to exploration and development proposals to further its conservation and management objective to avoid BLM-approved activity that will contribute to a need to list such a species or their habitat. BLM may require modifications to or disapprove proposed activity that is likely to result in jeopardy to the continued existence of a proposed or listed threatened or endangered species or result in the destruction or adverse modification of a designated or proposed critical habitat. BLM will not approve any ground-disturbing activity that may affect any such species or requirements of the Endangered Species Act as amended, 16 U.S.C. § 1531 et seq., including completion of any required procedure for conference or consultation.

Objective: Avoid BLM-approved activity that will contribute to a need to list a species or their habitat as threatened or endangered.

Exception: None.

Modification: None.

Waiver: None.

RESOURCE: WESTSLOPE CUTTHROAT TROUT HABITAT (90-99% PURE)

Stipulation: Controlled Surface Use. Activities within 1/2 mile of streams containing populations of westslope cutthroat trout with purity of 90-99% may be relocated, require special design, or require on and off site mitigation measures to prevent impacts to sensitive trout populations.

Objective: To ensure healthy aquatic habitat exists in drainages important to the viability of Upper Missouri River and Columbia River Basins Westslope Cutthroat Trout.

Exception: An exception may be granted after a site assessment is conducted and if the operator can demonstrate in a surface use plan of operations that adverse effects can be eliminated and activities would not affect sensitive trout populations. Apply the following mitigation measures:

a) No net increase in sediment over existing condition.

b) No adverse effects on water quality and quantity.

Modification: None.

Waiver: A waiver may be granted if the MFWP determines the stream is no longer considered important to the viability of the species.

RESOURCE: WESTSLOPE CUTTHROAT TROUT HABITAT (99-100% PURE)

Stipulation: No Surface Occupancy. No activity allowed within ½ mile from centerline of stream containing known populations of 99-100% genetically pure westslope cutthroat trout.

Objective: To prevent sensitive aquatic habitat and trout populations from being impacted.

Exception: An exemption may be granted after a site assessment is conducted and if the operator can demonstrate in a surface use plan of operations that adverse effects can be eliminated and activities would not affect sensitive trout populations. Apply the following mitigation measures:

a) No net increase in sediment over existing condition.

b) No adverse effects on water quality and quantity.

Modifications: None.

Waiver: A waiver may be granted if the MFWP determines the stream is no longer considered important to the viability of the species.

RESOURCE: FLUVIAL AND ADFLUVIAL ARCTIC GRAYLING HABITAT

Stipulation: Controlled Surface Use. Activities may be relocated, require special design, or require on and off site mitigation measures to prevent impacts to grayling populations and habitat located in the Big Hole.

Objective: To ensure healthy aquatic habitat exists along rivers and tributaries important to the viability of fluvial and adfluvial Arctic grayling.

Exception: An exception may be granted after a site assessment is conducted and if the operator can demonstrate in a surface use plan of operations that adverse effects can be eliminated and activities would not affect Arctic grayling populations. The following mitigation measures would apply:

a) No net increase in sediment over existing condition.

b) No adverse effects on water quality and quantity.

Modification: None.

Waiver: A waiver may be granted if the MFWP and the USFWS determines the stream is no longer considered important to the viability of the species.

RESOURCE: BULL TROUT

Stipulation: No Surface Occupancy. No activity allowed within 1/2 mile from centerline of streams containing known populations of bull trout.

Objective: To ensure healthy aquatic habitat exists in drainages important to the viability of bull trout.

Exception: An exception may be granted after a site assessment is conducted and if the operator can demonstrate in a surface use plan of operations that adverse effects can be eliminated and activities would not affect sensitive trout populations. Apply the following mitigation measures:

a) No net increase in sediment over existing condition.

b) No adverse effects on water quality and quantity.

Modification: None.

Waiver: A waiver may be granted if the MFWP and the USFWS determines the stream is no longer considered important to the viability of the species.

RESOURCE: YELLOWSTONE CUTTHROAT (90-100% PURE)

Stipulation: Controlled Surface Use. Activities may be relocated, require special design, or require on and off site mitigation measures to prevent impacts to 90-100% genetically pure Yellowstone cutthroat trout populations and habitat located in the Yellowstone Watershed.

Objective: To ensure healthy aquatic habitat exists in drainages important to the viability of Yellowstone Cutthroat.

Exception: An exception may be granted after a site assessment is conducted and if the operator can demonstrate in a surface use plan of operations that adverse effects can be eliminated and activities would not affect sensitive trout populations. The following mitigation measures would apply:

a) No net increase in sediment over existing condition.

b) No adverse effects on water quality and quantity.

Modification: None.

Waiver: A waiver may be granted if the MFWP and the USFWS determines the stream is no longer considered important to the viability of the species.

RESOURCE: CLASS 1 FISHERIES

Stipulation: Controlled Surface Use. Activities may be relocated, require special design, or require on and off site mitigation measures to protect Class 1 fishery streams (Blue Ribbon trout streams).

Objective: To ensure healthy aquatic habitat are maintained along Class 1 fisheries.

Exception: An exception may be granted if MFWP modifies the Class 1 fisheries rating. Application of the following mitigation measures apply:

a) No net increase in sediment over existing condition.

b) No adverse effects on water quality and quantity.

Modification: None.

Waiver: None.

RESOURCE: DEVELOPED RECREATION SITES

Stipulation: Controlled Surface Use. Activities within ¼ mile of developed recreation sites (regardless of administering agency) must be conducted in a manner to minimize surface disturbance, avoid facilities, and minimize impacts with other public land users. There are currently 49 developed BLM recreation sites: Beartooth Landing Rec Site, Bryant Creek Rec Site, Buffalo Hump Rec Site, Carbella Rec Site, Clark's Bay Rec Site, Crimson Bluff Rec Site, Crow Creek Rec Site, Departure Point Rec Site, Devil's Elbow Rec Site, Dickie Bridge Rec Site, Divide Bridge Campground, Divide Bridge Day Use, East Bank Rec Site, Four Corners OHV Trailhead, French Bar Rec Site, Galena Gulch Rec Site, Headlane Trailhead, Holter Lake Dam Rec Site, Holter Lake Rec Site, Jerry Creek Br Fishing Access, John G Mine Trailhead, Log Gulch Rec Site, Lombard Historical, Lower Toston Rec Site, Maiden Rock East, McMaster Hill East Trailhead, McMaster Hill West Trailhead, Moose Creek Trailhead, Ohio Gulch OHV Trailhead, Pintlar Creek Rec Site, Pipestone OHV Rec Site, Radersburg OHV Trailhead, Ringing Rocks Rec Site, Sawlog Creek Rec Site, Sawmill Gulch Trailhead, Sheep Camp Rec Site, Sheep Mountain Trailhead, Sleeping Giant Trailhead, Spokane Bay Rec Site, Spokane Bay Trailhead, Spokane Hills South, Titan Gulch Rec Site, Toston Dam Rec Site, Tumbleweed Lane Trailhead, Two Camps Vista, Ward Ranch Historical Site, Whiskey Gulch Trailhead, White Sandy Campground, Woodsiding Trailhead.

Objective: To recognize and protect the public's opportunity for quality recreation experiences at those sites developed for that purpose. A ¼ mile buffer would protect capital investment and, to some extent, visitors' recreation experiences while at the site.

Exception: An exception may be granted if a site is moved or eliminated.

Modification: The list of developed recreation sites may be modified if development is removed, or if a currently undeveloped site is developed in the future.

Waiver: A waiver may be granted if a site is moved or eliminated.

RESOURCE: CULTURAL AND PALEONTOLOGICAL RESOURCES

Stipulation: Controlled Surface Use. An inventory of the leased lands may be required prior to surface disturbance to determine if cultural resources or paleontological localities are present and to identify needed mitigation measures. Prior to undertaking any surface-disturbing activities on the lands covered by this lease, the lessee or operator shall:

1) Contact the Surface Management Agency to determine if a cultural or paleontological resource inventory is required. If an inventory is required, then;
2) The SMA will complete the required inventory; or the lessee or operator, at their option, may engage the services of a cultural resource consultant acceptable to the SMA to conduct an inventory of the area of proposed surface disturbance. The operator may elect to inventory an area larger than the planned disturbance to cover possible site relocation, or for planning purposes.
3) Implement mitigation measures required by the SMA. Mitigation may include the relocation of proposed lease-related activities or other protective measures such as data recovery and/or extensive recordation.
4) The SMA will consult with Native American tribes as per IM 2005 – 003.

The lessee or operator is required to bring to the attention of the field office manager any cultural resources or other objects of scientific interest discovered as a result of approved operations under the lease, and shall leave all discoveries intact and undisturbed until directed to proceed by the field office manager (16 U.S.C. 470).

Objective: Compliance with Section 106 of the National Historic Preservation Act is required for all actions which may affect cultural resources eligible for nomination to the National Register of Historic Places. Section 6 of the Oil and Gas Lease Terms (Form 3100-11) requires that operations be conducted in a manner that minimizes adverse impacts to cultural and other resources.

Exception: None.

Modification: None.

Waiver: None.

RESOURCE: NATIONAL REGISTER OF HISTORIC PROPERTIES ELIGIBLE PROPERTIES/DISTRICTS

Stipulation: No Surface Occupancy: Activity is prohibited within 300 feet of site boundaries and/or districts eligible for, or listed on the National Register of Historic Places. There is one known district, the Indian Creek Historic Mining District (134 acres).

Objective: To avoid disturbance to and protect, significant properties, districts, and their settings.

Exception: An exception to this stipulation may be granted by the authorized officer if the lessee or operator submits a plan which demonstrates that the adverse impacts to cultural properties can be mitigated through data recovery and/or extensive recordation. Where impacts to cultural resources cannot be mitigated to the satisfaction of the Surface Management Agency, surface occupancy in that area must be prohibited.

Modification: No modification will be granted.

Waiver: No waiver will be granted.

RESOURCE: TRADITIONAL CULTURAL PROPERTIES

Stipulation: No Surface Occupancy: Activity is prohibited within ½ mile, or line-of-site of the identified Traditional Cultural Property, whichever criterion protects the viewshed of that property.

Objective: To avoid disturbance and protect cultural properties determined to be of particular importance to Native American Groups, determined to be Traditional Cultural Properties, and/or designated to be for traditional use.

Exception: An exception to this stipulation may be granted by the authorized officer if the Indian community no longer attaches those traditional values to the lease area.

Modification: No modification will be granted.

Waiver: No waiver will be granted.

RESOURCE: WETLANDS, FLOODPLAINS, RIPARIAN AREAS, AND WATER QUALITY

Stipulation: No Surface Occupancy. Activity is prohibited within wetlands, floodplains, and riparian areas.

Objective: To maintain riparian/wetland functions and water quality.

Exception: An exception to this stipulation may be granted by the authorized officer if the operator submits a plan that demonstrates that impacts from the proposed action are minimal or can be adequately mitigated.

Modification: None.

Waiver: None.

RESOURCE: SPECIAL STATUS PLANT HABITATS

Stipulation: Controlled Surface Use. A field inspection will be conducted for special status plant species by the lessee prior to any surface disturbance. A list of special status plant species will be provided to the lessee at the time of the lease. Plant Species on the list are subject to change over time as new information becomes available. Plant inventories must be conducted at a time of year when the target species are identifiable. A report must be provided to the BLM documenting the presence or absence of special status plants in the area proposed for surface disturbance. The findings of this report may result in restrictions to the operator's plans or may preclude use and occupancy.

Objective: Protect and conserve rare plants, associated plant communities and the habitat that supports them.

Exception: An exception may be granted if BLM determines that the portion of the lease identified for surface disturbing activities does not support special status plant species or provide potential habitat for these species.

Modification: The boundaries of the area to be inventoried for special status plants may be modified if BLM determines that a large portion of the lease identified for surface disturbing activities doesn't support special status plant species or provide potential habitat for these species.

Waiver: The field inspection and plant inventory may be waived by the authorized if he/she determines that the subject lease occurs in an area with no known populations of special status plant species and that the area doesn't provide habitat for those species.

RESOURCE: KNOWN OR DISCOVERED SPECIAL STATUS PLANTS OR POPULATIONS

Stipulation: No Surface Occupancy. Surface occupancy and use is prohibited within special status plant population locations.

Objective: Protect and conserve rare plants, associated plant communities and the habitat that supports them.

Exception: None.

Modification: None.

Waiver: None.

RESOURCE: MUNICIPAL WATERSHEDS

Stipulation: Controlled Surface Use. All lease operations will avoid negative impacts to water at the intakes of the following municipal watersheds that overlap portions of the lease: Missouri River Siphon, Tenmile Creek Drainage, Big Hole River Intake, and Moulton Reservoir. Measures may include relocation of proposed roads, drilling sites and other facilities, or application of appropriate mitigating measures mentioned in the list of conditions attached to the APD.

Objective: To protect drinking water for Municipalities within the Butte Field Office.

Exception: An exception may be granted after a site assessment is conducted and if the operator can demonstrate in a surface use plan of operations that water quality at intakes will meet drinking water standards established by MDEQ.

Modification: The boundaries of the stipulated area may be modified if the authorized officer determines that portions of the area can be occupied and water quality at intakes will meet drinking water standards established by MDEQ.

Waiver: This stipulation may be waived if the authorized officer determines that operations will not cause water quality at intakes to fail to meet drinking water standards established by MDEQ.

RESOURCE: RECREATION AND PUBLIC PURPOSES ACT LEASES AND PATENTS, AND 2920 AUTHORIZATIONS

Stipulation: No Surface Occupancy. Surface Occupancy and use is prohibited on Recreation & Public Purposes leases and patents and on leases and permits authorized under regulations found at 43 CFR 2920.

Objective: To protect developed facilities and commercial, recreational, and public uses and prevent incompatible uses on existing authorized areas.

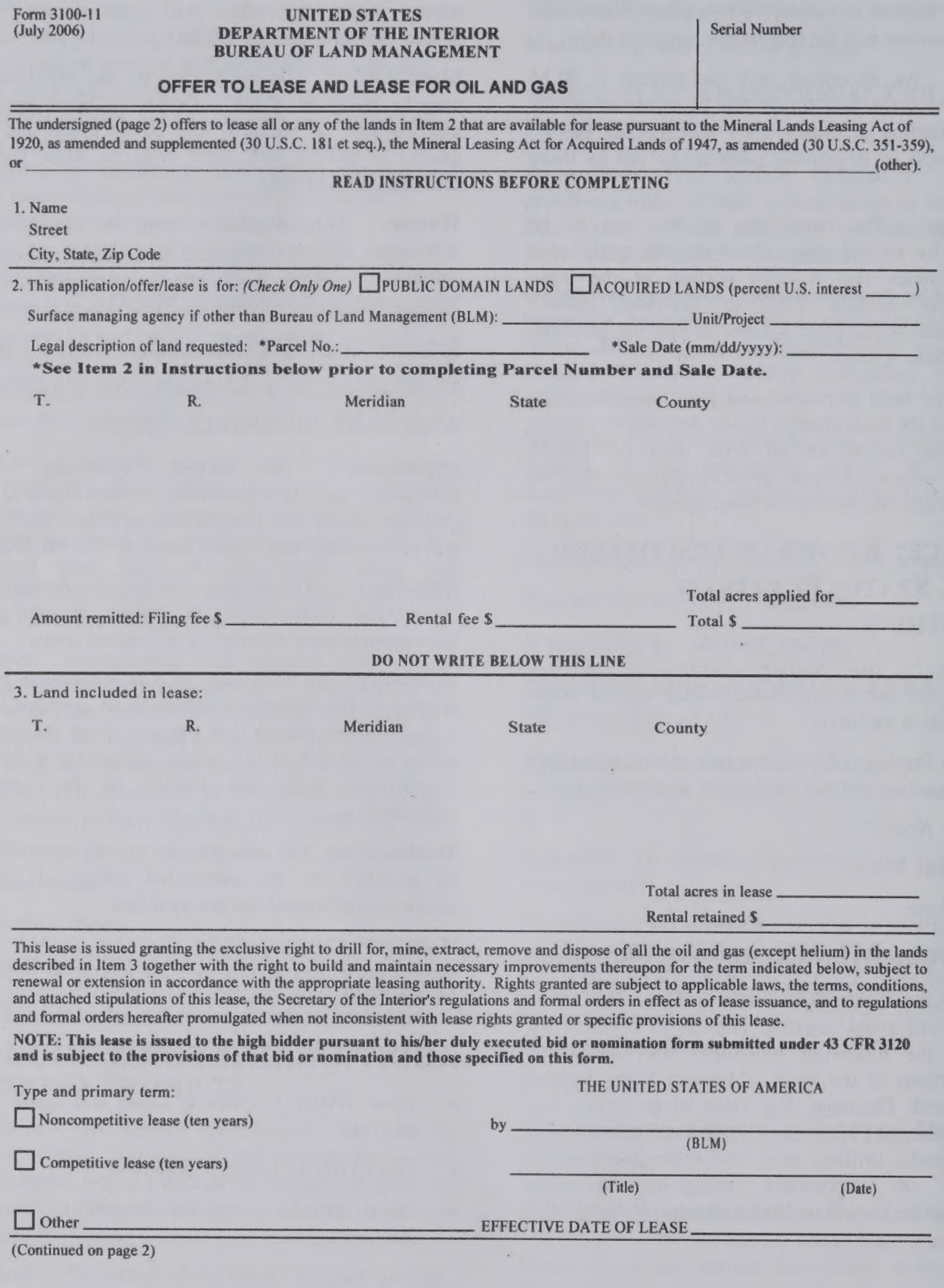
Exception: An exception to this stipulation may be granted by the authorized officer if the operator submits a plan demonstrating that impacts from the proposed action are acceptable or can be adequately mitigated in coordination with the holder of the land use authorization.

Modification: The area affected by this stipulation may be modified by the authorized officer if land use authorization boundaries are modified.

Waiver: This stipulation may be waived by the authorized officer if land use authorization boundaries are modified.

ADDITIONAL INFORMATION

- Form 3100-11: Offer to Lease and Lease for Oil and Gas
- Form 3109-1: Lease Stipulations
- Form GP-135: Special Stipulation Bureau of Reclamation



Form 3100-11
(July 2006)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Serial Number

OFFER TO LEASE AND LEASE FOR OIL AND GAS

The undersigned (page 2) offers to lease all or any of the lands in Item 2 that are available for lease pursuant to the Mineral Lands Leasing Act of 1920, as amended and supplemented (30 U.S.C. 181 et seq.), the Mineral Leasing Act for Acquired Lands of 1947, as amended (30 U.S.C. 351-359), or ______________________________ (other).

READ INSTRUCTIONS BEFORE COMPLETING

1. Name
Street
City, State, Zip Code

2. This application/offer/lease is for: *(Check Only One)* ☐ PUBLIC DOMAIN LANDS ☐ ACQUIRED LANDS (percent U.S. interest ______)

Surface managing agency if other than Bureau of Land Management (BLM): ____________________ Unit/Project ________________

Legal description of land requested: *Parcel No.: ____________________ *Sale Date (mm/dd/yyyy): ______________

***See Item 2 in Instructions below prior to completing Parcel Number and Sale Date.**

T.	R.	Meridian	State	County

Total acres applied for __________

Amount remitted: Filing fee $ ________________ Rental fee $ ________________ Total $ ________________

DO NOT WRITE BELOW THIS LINE

3. Land included in lease:

T.	R.	Meridian	State	County

Total acres in lease ______________

Rental retained $ ______________

This lease is issued granting the exclusive right to drill for, mine, extract, remove and dispose of all the oil and gas (except helium) in the lands described in Item 3 together with the right to build and maintain necessary improvements thereupon for the term indicated below, subject to renewal or extension in accordance with the appropriate leasing authority. Rights granted are subject to applicable laws, the terms, conditions, and attached stipulations of this lease, the Secretary of the Interior's regulations and formal orders in effect as of lease issuance, and to regulations and formal orders hereafter promulgated when not inconsistent with lease rights granted or specific provisions of this lease.

NOTE: This lease is issued to the high bidder pursuant to his/her duly executed bid or nomination form submitted under 43 CFR 3120 and is subject to the provisions of that bid or nomination and those specified on this form.

Type and primary term:

☐ Noncompetitive lease (ten years)

☐ Competitive lease (ten years)

☐ Other ______________________________

THE UNITED STATES OF AMERICA

by ______________________________
(BLM)

____
(Title) (Date)

EFFECTIVE DATE OF LEASE ______________

(Continued on page 2)

4. (a) Undersigned certifies that (1) offeror is a citizen of the United States; an association of such citizens; a municipality; or a corporation organized under the laws of the United States or of any State or Territory thereof, (2) all parties holding an interest in the offer are in compliance with 43 CFR 3100 and the leasing authorities; (3) offeror's chargeable interests, direct and indirect, in each public domain and acquired lands separately in the same State, do not exceed 246,080 acres in oil and gas leases (of which up to 200,000 acres may be in oil and gas options or 300,000 acres in leases in each leasing District in Alaska of which up to 200,000 acres may be in options, (4) offeror is not considered a minor under the laws of the State in which the lands covered by this offer are located; (5) offeror is in compliance with qualifications concerning Federal coal lease holdings provided in sec. 2(a)2(A) of the Mineral Leasing Act; (6) offeror is in compliance with reclamation requirements for all Federal oil and gas lease holdings as required by sec. 17(g) of the Mineral Leasing Act; and (7) offeror is not in violation of sec. 41 of the Act. (b) Undersigned agrees that signature to this offer constitutes acceptance of this lease, including all terms conditions, and stipulations of which offeror has been given notice, and any amendment or separate lease that may include any land described in this offer open to leasing at the time this offer was filed but omitted for any reason from this lease. The offeror further agrees that this offer cannot be withdrawn, either in whole or in part unless the withdrawal is received by the proper BLM State Office before this lease, an amendment to this lease, or a separate lease, whichever covers the land described in the withdrawal, has been signed on behalf of the United States.

This offer will be rejected and will afford offeror no priority if it is not properly completed and executed in accordance with the regulations, or if it is not accompanied by the required payments.

Duly executed this ____________ day of ______________________ , 20 ____ ________________________________

(Signature of Lessee or Attorney-in-fact)

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212 make it a crime for any person knowingly and willfully to make to any department or Agency of the United States any false, fictitious, or fraudulent statements or representations as to any matter within its jurisdiction.

LEASE TERMS

Sec. 1. Rentals--Rentals must be paid to proper office of lessor in advance of each lease year. Annual rental rates per acre or fraction thereof are:

(a) Noncompetitive lease, $1.50 for the first 5 years; thereafter $2.00;

(b) Competitive lease, $1.50; for the first 5 years; thereafter $2.00;

(c) Other, see attachment, or

as specified in regulations at the time this lease is issued.

If this lease or a portion thereof is committed to an approved cooperative or unit plan which includes a well capable of producing leased resources, and the plan contains a provision for allocation of production, royalties must be paid on the production allocated to this lease. However, annual rentals must continue to be due at the rate specified in (a), (b), or (c) rentals for those lands not within a participating area.

Failure to pay annual rental, if due, on or before the anniversary date of this lease (or next official working day if office is closed) must automatically terminate this lease by operation of law. Rentals may be waived, reduced, or suspended by the Secretary upon a sufficient showing by lessee.

Sec. 2. Royalties--Royalties must be paid to proper office of lessor. Royalties must be computed in accordance with regulations on production removed or sold. Royalty rates are:

(a) Noncompetitive lease, 12 1/2%;

(b) Competitive lease, 12 1/2 %;

(c) Other, see attachment; or

as specified in regulations at the time this lease is issued.

Lessor reserves the right to specify whether royalty is to be paid in value or in kind, and the right to establish reasonable minimum values on products after giving lessee notice and an opportunity to be heard. When paid in value, royalties must be due and payable on the last day of the month following the month in which production occurred. When paid in kind, production must be delivered, unless otherwise agreed to by lessor, in merchantable condition on the premises where produced without cost to lessor. Lessee must not be required to hold such production in storage beyond the last day of the month following the month in which production occurred, nor must lessee be held liable for loss or destruction of royalty oil or other products in storage from causes beyond the reasonable control of lessee.

Minimum royalty in lieu of rental of not less than the rental which otherwise would be required for that lease year must be payable at the end of each lease year beginning on or after a discovery in paying quantities. This minimum royalty may be waived, suspended, or reduced, and the above royalty rates may be reduced, for all or portions of this lease if the Secretary determines that such action is necessary to encourage the greatest ultimate recovery of the leased resources, or is otherwise justified.

An interest charge will be assessed on late royalty payments or underpayments in accordance with the Federal Oil and Gas Royalty Management Act of 1982 (FOGRMA) (30 U.S.C. 1701). Lessee must be liable for royalty payments on oil and gas lost or wasted from a lease site when such loss or waste is due to negligence on the part of the operator, or due to the failure to comply with any rule, regulation, order, or citation issued under FOGRMA or the leasing authority.

(Continued on page 3)

Sec. 3. Bonds - A bond must be filed and maintained for lease operations as required under regulations.

Sec. 4. Diligence, rate of development, unitization, and drainage - Lessee must exercise reasonable diligence in developing and producing, and must prevent unnecessary damage to, loss of, or waste of leased resources. Lessor reserves right to specify rates of development and production in the public interest and to require lessee to subscribe to a cooperative or unit plan, within 30 days of notice, if deemed necessary for proper development and operation of area, field, or pool embracing these leased lands. Lessee must drill and produce wells necessary to protect leased lands from drainage or pay compensatory royalty for drainage in amount determined by lessor.

Sec. 5. Documents, evidence, and inspection - Lessee must file with proper office of lessor, not later than 30 days after effective date thereof, any contract or evidence of other arrangement for sale or disposal of production. At such times and in such form as lessor may prescribe, lessee must furnish detailed statements showing amounts and quality of all products removed and sold, proceeds therefrom, and amount used for production purposes or unavoidably lost. Lessee may be required to provide plats and schematic diagrams showing development work and improvements, and reports with respect to parties in interest, expenditures, and depreciation costs. In the form prescribed by lessor, lessee must keep a daily drilling record, a log, information on well surveys and tests, and a record of subsurface investigations and furnish copies to lessor when required. Lessee must keep open at all reasonable times for inspection by any representative of lessor, the leased premises and all wells, improvements, machinery, and fixtures thereon, and all books, accounts, maps, and records relative to operations, surveys, or investigations on or in the leased lands. Lessee must maintain copies of all contracts, sales agreements, accounting records, and documentation such as billings, invoices, or similar documentation that supports costs claimed as manufacturing, preparation, and/or transportation costs. All such records must be maintained in lessee's accounting offices for future audit by lessor. Lessee must maintain required records for 6 years after they are generated or, if an audit or investigation is underway, until released of the obligation to maintain such records by lessor.

During existence of this lease, information obtained under this section will be closed to inspection by the public in accordance with the Freedom of Information Act (5 U.S.C. 552).

Sec. 6. Conduct of operations - Lessee must conduct operations in a manner that minimizes adverse impacts to the land, air, and water, to cultural, biological, visual, and other resources, and to other land uses or users. Lessee must take reasonable measures deemed necessary by lessor to accomplish the intent of this section. To the extent consistent with lease rights granted, such measures may include, but are not limited to, modification to siting or design of facilities, timing of operations, and specification of interim and final reclamation measures. Lessor reserves the right to continue existing uses and to authorize future uses upon or in the leased lands, including the approval of easements or rights-of-way. Such uses must be conditioned so as to prevent unnecessary or unreasonable interference with rights of lessee.

Prior to disturbing the surface of the leased lands, lessee must contact lessor to be apprised of procedures to be followed and modifications or reclamation measures that may be necessary. Areas to be disturbed may require inventories or special studies to determine the extent of impacts to other resources. Lessee may be required to complete minor inventories or short term special studies under guidelines provided by lessor. If in the conduct of operations, threatened or endangered species, objects of historic or scientific interest, or substantial unanticipated environmental effects are observed, lessee must immediately contact lessor. Lessee must cease any operations that would result in the destruction of such species or objects.

(Continued on page 4)

Sec. 7. Mining operations - To the extent that impacts from mining operations would be substantially different or greater than those associated with normal drilling operations, lessor reserves the right to deny approval of such operations.

Sec. 8. Extraction of helium - Lessor reserves the option of extracting or having extracted helium from gas production in a manner specified and by means provided by lessor at no expense or loss to lessee or owner of the gas. Lessee must include in any contract of sale of gas the provisions of this section.

Sec. 9. Damages to property - Lessee must pay lessor for damage to lessor's improvements, and must save and hold lessor harmless from all claims for damage or harm to persons or property as a result of lease operations.

Sec. 10. Protection of diverse interests and equal opportunity - Lessee must pay, when due, all taxes legally assessed and levied under laws of the State or the United States; accord all employees complete freedom of purchase; pay all wages at least twice each month in lawful money of the United States; maintain a safe working environment in accordance with standard industry practices; and take measures necessary to protect the health and safety of the public.

Lessor reserves the right to ensure that production is sold at reasonable prices and to prevent monopoly. If lessee operates a pipeline, or owns controlling interest in a pipeline or a company operating a pipeline, which may be operated accessible to oil derived from these leased lands, lessee must comply with section 28 of the Mineral Leasing Act of 1920.

Lessee must comply with Executive Order No. 11246 of September 24, 1965, as amended, and regulations and relevant orders of the Secretary of Labor issued pursuant thereto. Neither lessee nor lessee's subcontractors must maintain segregated facilities.

Sec. 11. Transfer of lease interests and relinquishment of lease - As required by regulations, lessee must file with lessor any assignment or other transfer of an interest in this lease. Lessee may relinquish this lease or any legal subdivision by filing in the proper office a written relinquishment, which will be effective as of the date of filing, subject to the continued obligation of the lessee and surety to pay all accrued rentals and royalties.

Sec. 12. Delivery of premises - At such time as all or portions of this lease are returned to lessor, lessee must place affected wells in condition for suspension or abandonment, reclaim the land as specified by lessor and, within a reasonable period of time, remove equipment and improvements not deemed necessary by lessor for preservation of producible wells.

Sec. 13. Proceedings in case of default - If lessee fails to comply with any provisions of this lease, and the noncompliance continues for 30 days after written notice thereof, this lease will be subject to cancellation unless or until the leasehold contains a well capable of production of oil or gas in paying quantities, or the lease is committed to an approved cooperative or unit plan or communitization agreement which contains a well capable of production of unitized substances in paying quantities. This provision will not be construed to prevent the exercise by lessor of any other legal and equitable remedy, including waiver of the default. Any such remedy or waiver will not prevent later cancellation for the same default occurring at any other time. Lessee will be subject to applicable provisions and penalties of FOGRMA (30 U.S.C. 1701).

Sec. 14. Heirs and successors-in-interest - Each obligation of this lease will extend to and be binding upon, and every benefit hereof will inure to the heirs, executors, administrators, successors, beneficiaries, or assignees of the respective parties hereto.

A. General:

1. Page 1 of this form is to be completed only by parties filing for a noncompetitive lease. The BLM will complete page 1 of the form for all other types of leases.

2. Entries must be typed or printed plainly in ink. Offeror must sign Item 4 in ink.

3. An original and two copies of this offer must be prepared and filed in the proper BLM State Office. See regulations at 43 CFR 1821.2-1 for office locations.

4. If more space is needed, additional sheets must be attached to each copy of the form submitted.

B. Special:

Item 1 - Enter offeror's name and billing address.

Item 2 - Identify the mineral status and, if acquired lands, percentage of Federal ownership of applied for minerals. Indicate the agency controlling the surface of the land and the name of the unit or project which the land is a part. The same offer may not include both Public Domain and Acquired lands. Offeror also may provide other information that will assist in establishing title for minerals. The description of land must conform to 43 CFR 3110. A single parcel number and Sale Date will be the only acceptable description during the period from the first day following the end of a competitive process until the end of that same month, using the parcel number on the List of Lands Available for Competitive Nominations or the Notice of Competitive Lease Sale, whichever is appropriate.

Payments: The amount remitted must include the filing fee and the first year's rental at the rate of $1.50 per acre or fraction thereof. The full rental based on the total acreage applied for must accompany an offer even if the mineral interest of the United States is less than 100 percent. The filing fee will be retained as a service charge even if the offer is completely rejected or withdrawn. To protect priority, it is important that the rental submitted be sufficient to cover all the land requested. If the land requested includes lots or irregular quarter-quarter sections, the exact area of which is not known to the offeror, rental should be submitted on the basis of each such lot or quarter-quarter section containing 40 acres. If the offer is withdrawn or rejected in whole or in part before a lease issues, the rental remitted for the parts withdrawn or rejected will be returned.

Item 3 - This space will be completed by the United States.

NOTICES

The Privacy Act of 1974 and the regulations in 43 CFR 2.48(d) provide that you be furnished with the following information in connection with information required by this oil and gas lease offer.

AUTHORITY: 30 U.S.C. 181 et seq.; 30 U.S.C 351-359.

PRINCIPAL PURPOSE: The information is to be used to process oil and gas offers and leases.

ROUTINE USES: (1) The adjudication of the lessee's rights to the land or resources. (2) Documentation for public information in support of notations made on land status records for the management, disposal, and use of public lands and resources. (3) Transfer to appropriate Federal agencies when consent or concurrence is required prior to granting a right in public lands or resources. (4)(5) Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions.

EFFECT OF NOT PROVIDING INFORMATION: If all the information is not provided, the offer may be rejected. See regulations at 43 CFR 3100.

The Paperwork Reduction Act of 1995 requires us to inform you that:
This information is being collected pursuant to the law.
This information will be used to create and maintain a record of oil and gas lease activity.
Response to this request is required to obtain a benefit.

BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 1 hour per response including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0185), Bureau Information Collection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop, 401LS, Washington, D.C. 20240.

Form 3109-1
(December 1972)
(formerly 3103-1)

LEASE STIPULATIONS
BUREAU OF RECLAMATION

The lessee agrees to maintain, if required by the lessor during the period of this lease, including any extension thereof, an additional bond with qualified sureties in such sum as the lessor, if it considers that the bond required under Section 2(a) is insufficient, may at any time require:

(a) to pay for damages sustained by any reclamation homestead entryman to his crops or improvements caused by drilling or other operations of the lessee, such damages to include the reimbursement of the entryman by the lessee, when he uses or occupies the land of any homestead entryman, for all construction and operation and maintenance charges becoming due during such use or occupation upon any portion of the land so used and occupied;

(b) to pay any damage caused to any reclamation project or water supply thereof by the lessee's failure to comply fully with the requirements of this lease; and

(c) to recompense any nonmineral applicant, entryman, purchaser under the Act of May 16, 1930 (46 Stat. 367), or patentee for all damages to crops or to tangible improvements caused by drilling or other prospecting operation, where any of the lands covered by this lease are embraced in any nonmineral application, entry, or patent under rights initiated prior to the date of this lease, with a reservation of the oil deposits, to the United States pursuant to the Act of July 17, 1914 (38 Stat. 509).

As to any lands covered by this lease within the area of any Government reclamation project, or in proximity thereto, the lessee shall take such precautions as required by the irrigation under such project or to the water supply thereof; *provided* that drilling is prohibited on any constructed works or right-of-way of the Bureau of Reclamation, and *provided, further,* that there is reserved to the lessor, its successors and assigns, the superior and prior right at all times to construct, operate, and maintain dams, dikes, reservoirs, canals, wasteways, laterals, ditches, telephone and telegraph lines, electric transmission lines, roadways, appurtenant irrigation structures, and reclamation works, in which construction, operation, and maintenance, the lessor, its successors and assigns, shall have the right to use any or all of the lands herein described without making compensation therefore, and shall not be responsible for any damage from the presence of water thereon or on account of ordinary, extraordinary, unexpected , or unprecedented floods. That nothing shall be done under this lease to increase the cost of, or interfere in any manner with, the construction, operation, and maintenance of such works. It is agreed by the lessee that, if the construction of any or all of said dams, dikes, reservoirs, canals, wasteways, laterals, ditches, telephone or telegraph lines, electric transmission lines, roadways, appurtenant irrigation structures or reclamation works across, over, or upon said lands should be made more expensive by reason of the existence of the improvements and workings of the lessee thereon, said additional expense is to be estimated by the Secretary of the Interior, whose estimate is to be final and binding upon the parties hereto, and that within thirty (30) days after demand is made upon the lessee for payment of any such sums, the lessee will make payment thereof to the United States, or its successors, constructing such dams, dikes, reservoirs, canals, wasteways, laterals, ditches, telephone and telegraph lines, electric transmission lines, roadways, appurtenant irrigation structures, or reclamation works, across, over, or upon said lands; *provided, however,* that subject to advance written approval by the United States, the location and course of any improvements or works and appurtenances may be changed by the lessee; *provided , further,* that the reservations, agreements, and conditions contained in the within lease shall be and remain applicable notwithstanding any change in the location or course of said improvements or works of lessee. The lessee further agrees that the United States, its officers, agents, and employees, and its successors and assigns shall not be held liable for any damage to the improvements or workings of the lessee resulting from the construction, operation, and maintenance of any of the works hereinabove enumerated. Nothing in this paragraph shall be construed as in any manner limiting other reservations in favor of the United States contained in this lease.

THE LESSEE FURTHER AGREES That there is reserved to the lessor, its successors and assigns, the prior right to use any of the lands herein leased, to construct, operate, and maintain dams, dikes, reservoirs, canals, wasteways, laterals, ditches, telephone and telegraph lines, electric transmission lines, roadways, or appurtenant irrigation structures, and also the right to remove construction materials therefrom, without any payment made by the lessor or its successors for such right, with the agreement on the part of the lessee that if the construction of any or all of such dams, dikes, reservoirs, canals, wasteways, laterals, ditches, telephone and telegraph lines, electric transmission lines, roadways, or appurtenant irrigation structures across, over, or upon said lands or the removal of construction materials therefrom, should be made more expensive by reason of the existence of improvements or workings of the lessee thereon, such additional expense is to be estimated by the Secretary of the Interior, whose estimate is to be final and binding upon the parties hereto, and that within thirty (30) days after demand is made upon the lessee for payment of any such sums, the lessee will make payment thereof to the United States or its successors constructing such dams, dikes, reservoirs, canals, wasteways, laterals, ditches, telephone and telegraph lines, electric transmission lines, roadways, or appurtenant irrigation structures across, over, or upon said lands or removing construction materials therefrom. The lessee further agrees that the lessor, its officers, agents, and employees and its successors and assigns shall not be held liable for any damage to the improvements or workings of the lessee resulting from the construction, operation, and maintenance of any of the works herein above enumerated. Nothing contained in this paragraph shall be construed as in any manner limiting other reservations in favor of the lessor contained in this lease.

To insure against the contamination of the waters of the_______________Reservoir,

___________________ Project, State of_________, the lessee agrees that the following further conditions shall apply to all drilling and operations on lands covered by this lease, which lie within the flowage or drainage area of the Reservoir, as such area is defined by the Bureau of Reclamation:

1. The drilling sites for any and all wells shall be approved by the Superintendent, Bureau of Reclamation,_______Project, before drilling begins. Sites for the construction of pipe-line rights-of-way or other authorized facilities shall also be approved by the Superintendent before construction begins.

2. All drilling or operation methods or equipment shall, before their employment, be inspected and approved by the Superintendent of the____Project,____________ ______________, and by the supervisor of the U.S. Geological Survey having jurisdiction over the area.

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GP-135

(02/03)

SPECIAL STIPULATION - BUREAU OF RECLAMATION

To avoid interference with recreation development and/or impacts to fish and wildlife habitat and to assist in preventing damage to any Bureau of Reclamation dams, reservoirs, canals, ditches, laterals, tunnels, and related facilities, and contamination of the water supply therein, the lessee agrees that the following conditions shall apply to all exploration and developmental activities and other operation of the works thereafter on lands covered by this lease:

1. Prior to commencement of any surface-disturbing work including drilling, access road work, and well location construction, a surface use and operations plan will be filed with the appropriate officials. A copy of this plan will be furnished to the Regional Director, Great Plains Region, Bureau of Reclamation, P.O. Box 36900, Billings, MT 59107-6900, for review and consent prior to approval of the plan. Such approval will be conditioned on reasonable requirements needed to prevent soil erosion, water pollution, and unnecessary damages to the surface vegetation and other resources, including cultural resources, of the United States, its lessees, permittees, or licensees, and to provide for the restoration of the land surface and vegetation. The plan shall contain provisions as the Bureau of Reclamation may deem necessary to maintain proper management of the water, recreation, lands structures, and resources, including cultural resources, within the prospecting, drilling, or construction area.

Drilling sites for all wells and associated investigations such as seismograph work shall be included in the above-mentioned surface use and operation plan.

If later explorations require departure from or additions to the approved plan, these revisions or amendments, together with a justification statement for proposed revisions, will be submitted for approval to the Regional Director, Great Plains Region, Bureau of Reclamation, or his authorized representative.

Any operations conducted in advance of approval of an original, revised, or amended prospecting plan, or which are not in accordance with an approved plan constitute a violation of the terms of this lease. The Bureau of Reclamation reserves the right to close down operations until such corrective action, as is deemed necessary, is taken by the lessee.

2. No occupancy of the surface of the following excluded areas is authorized by this lease. It is understood and agreed that the use of these areas for Bureau of Reclamation purposes is superior to any other use. The following restrictions apply only to mineral tracts located within the boundary of a Bureau of Reclamation project where the United States owns 100 percent of the fee mineral interest.

a. Within 500 feet on either side of the centerline of any and all roads or highways within the leased area.

b. Within 200 feet on either side of the centerline of any and all trails within the leased area.

c. Within 500 feet of the normal high-water line of any and all live streams in the leased area.

d. Within 400 feet of any and all recreation developments within the leased area.

e. Within 400 feet of any improvements either owned, permitted, leased, or otherwise authorized by the Bureau of Reclamation within the leased area.

f. Within 200 feet of established crop fields, food plots, and tree/shrub plantings within the leased area.

g. Within 200 feet of slopes steeper than a 2:1 gradient within the leased area.

h. Within established rights-of-way of canals, laterals, and drainage ditches within the leased area.

i. Within a minimum of 500 feet horizontal from the centerline of the facility or 50 feet from the outside toe of the canal, lateral, or drain embankment, whichever distance is greater, for irrigation facilities without clearly marked rights-of-way within the leased area.

j. Providing that appropriate environmental compliance measures can be ensured, and providing further that Reclamation project works and other public interests can be protected, Reclamation may consider, on a case-by-case basis, waiving the requirement specified in Section 2 hereof. **HOWEVER, LESSEES ARE ADVISED THAT OBTAINING SUCH A WAIVER CAN BE A DIFFICULT, TIME CONSUMING, AND COSTLY PROCESS WITH NO GUARANTEE THAT RECLAMATION WILL GRANT THE REQUESTED WAIVER.**

3. No occupancy of the surface or surface drilling will be allowed in the following areas. In addition, no directional drilling will be allowed that would intersect the subsurface zones delineated by a vertical plane in these areas. The following restrictions apply only to mineral tracts located within the boundary of a Bureau of Reclamation project, where the United States owns 100 percent of the fee mineral interest in said tract, or tracts.

a. Within 1,000 feet of the maximum water surface, as defined in the Standard Operating Procedures (SOP), of any reservoirs and related facilities located within the leased area.

b. Within 2,000 feet of dam embankments and appurtenance structures such as spillway structures, outlet works, etc.

c. Within one-half (1/2) mile horizontal from the centerline of any tunnel within the leased area.

d. Providing that appropriate environmental compliance measures can be ensured, and providing further that Reclamation project works and other public interests can be protected. Reclamation may consider, on a case-by-case basis, waiving the requirements specifies in Section 3 hereof. **HOWEVER, LESSEES ARE ADVISED THAT OBTAINING SUCH A WAIVER CAN BE A DIFFICULT, TIME CONSUMING, AND COSTLY PROCESS WITH NO GUARANTEE THAT RECLAMATION WILL GRANT THE REQUESTED WAIVER.**

4. The distances stated in items 2 and 3 above are intended to be general indicators only. The Bureau of Reclamation reserves the right to revise these distances as needed to protect Bureau of Reclamation facilities.

5. The use of explosives in any manner shall be so controlled that the works and facilities of the United States, its successors and assigns, will in no way be endangered or damaged. In this connection, an explosives use plan shall be submitted to and approved by the Regional Director, Great Plains Region, Bureau of Reclamation, or his/her authorized representative.

6. The lessee shall be liable for all damage to the property of the United States, its successors or assigns, resulting from the exploration, development, or operation of the works contemplated by this lease, and shall further hold the United States, its successors or assigns, and its officers, agents, and employees, harmless from all claims of third parties for injury or damage sustained or in any way resulting from the exercise of the rights and privileges conferred by the lease.

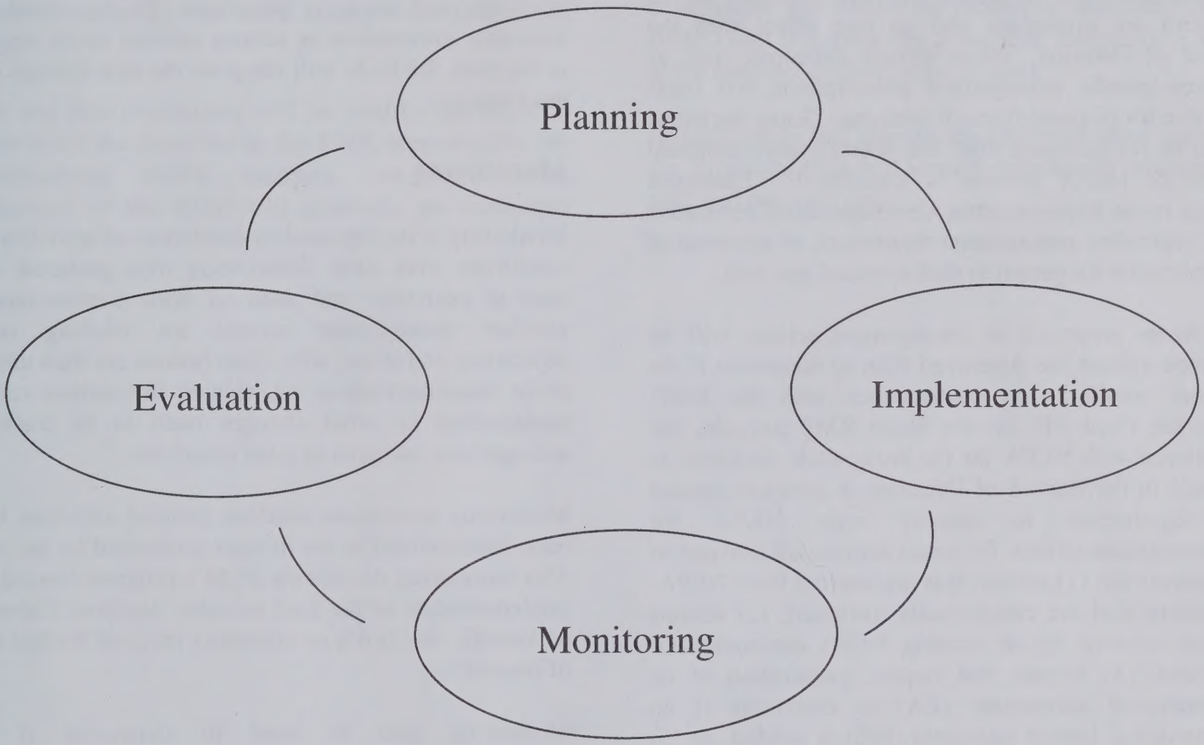
7. The lessee shall be liable for all damages to crops or improvements of any entryman, nonmineral applicant, or patentee, their successors or assigns, caused by or resulting from the drilling or other operations of the lessee, including reimbursement of any entryman or patentee, their successors or assigns, for all construction, operation, and maintenance charges becoming due on any portion of their said lands damaged as a result of the drilling or other operation of the lessee.

8. In addition to any other bond required under the provisions of this lease, the lessee shall provide such bond as the United States may at any time require for damages which may arise under the liability provisions of Section six (6) and seven (7) above.

APPENDIX N – IMPLEMENTATION AND MONITORING

Plan implementation is a continuous process occurring over the life of the resource management plan that will consider changing circumstances and new information through monitoring. The goal is to maintain a dynamic resource management plan that is evaluated and amended if necessary on an issue-by-issue basis.

The implementation and monitoring process for the Butte Field Office involves five major steps: planning, implementation, monitoring, evaluation, and adjustments, as necessary. Planning involves a great amount of time and resources to identify issues and management opportunities to address those issues. During the planning process, the scope of the issue is identified and management goals, objectives and actions are defined to address the issues. Once the planning process is completed, decisions are implemented, monitored, and evaluated over a period of time to determine if goals are being met and if management actions are achieving the desired objective or standard. Results of monitoring are documented and communicated to appropriate parties, and management objectives and actions are modified based on results, if necessary.



Planning

The Proposed RMP/Final EIS is approved once the Record of Decision is signed. An Approved Plan will also be available that will include all the approved decisions from the RMP.

The BLM regulation in 43 CFR 1610.5-4 provides that land use plan decisions and supporting components can be maintained to reflect minor changes in data. Maintenance is limited to further refining, documenting, or clarifying a previously approved decision incorporated in the plan. Maintenance must not expand the scope of resource uses or restrictions or change the terms, conditions, and decisions of the Approved Plan.

Land use plan decisions are changed through either a plan amendment or a plan revision. The process for conducting plan amendments is basically the same as the land use planning process used in developing RMPs. The primary difference is that circumstances may allow for completing a plan amendment through the environmental assessment (EA) process, rather than through an EIS. Plan amendments (43 CFR 1610.5-5) change one or more of the terms, conditions, or decisions of an approved land use plan. Plan amendments are most often prompted by the need to consider a proposal or action that does not conform to the plan; implement new or revised policy that changes land use plan decisions; respond to new, intensified, or changed uses on BLM land; and consider significant new information from resource assessments, monitoring, or scientific studies that change land use plan decisions.

Implementation

Implementation of the resource management plan (RMP) begins once the Record of Decision and Approved Plan for the Proposed RMP/Final EIS is signed.

Decisions made through the RMP planning process are implemented over a period of time. Some of the decisions are immediate and go into effect with the Record of Decision. These include decisions such as resource-specific management prescriptions and lands available for disposal through exchange. Some decisions would be implemented after site-specific environmental review or NEPA process is completed. Examples include range improvements, development of recreation sites, vegetation management treatments, or approval of an application for permit to drill a natural gas well.

Any future proposals or management actions will be reviewed against the Approved Plan to determine if the proposal would be in conformance with the RMP. While the Final EIS for the Butte RMP provides the compliance with NEPA for the broad-scale decisions to be made in the Record of Decision, it does not replace the requirement to comply with NEPA for implementation actions. Proposed actions fall into one of five categories: (1) actions that are exempt from NEPA; (2) actions that are categorically excluded; (3) actions that are covered by an existing NEPA environmental document; (4) actions that require preparation of an environmental assessment (EA) to determine if an environmental impact statement (EIS) is needed; or (5) actions that require preparation of an EIS. The NEPA procedural, documentation, and public involvement requirements are different for each category.

Activity level planning will address any proposed new activities and long-term permitted activities that need to be brought into compliance with plan decisions, subject to valid existing rights. Monitoring of these activities will then determine the effectiveness of applying the land use plan direction. Where land use plan actions or best management practices are not effective, modifications could occur without amendment or revision of the plan as long as assumptions and impacts disclosed in the analysis remain valid and broad-scale goals and objectives are not changed. This approach uses on-the-ground monitoring, review of scientific information, and consideration of practical experience and common sense to adjust management and modify implementation of the plan to reach the desired outcome.

As part of this process, the BLM will review management actions and the plan periodically to determine whether the objectives set forth in this document are being met. Where they are not being met, the BLM will consider adjustments of appropriate scope. Where the BLM considers taking or approving actions which will alter or not conform to overall direction of the plan, the BLM will prepare a plan amendment and environmental analysis of appropriate scope.
In addition, during the life of the Approved Plan, the BLM expects that new information gathered from field inventories and assessments, research, other agency studies, and other sources will update baseline data or support new management techniques, best management practices, and scientific principles. To the extent that such new information or actions address issues covered in the plan, the BLM will integrate the data through plan maintenance.

Monitoring

Monitoring is the repeated measurement of activities and conditions over time. Monitoring data gathered over time is examined and used to draw conclusions on whether management actions are meeting stated objectives, and if not, why. Conclusions are then used to make recommendations on whether to continue current management or what changes need to be made in management practices to meet objectives.

Monitoring determines whether planned activities have been implemented in the manner prescribed by the plan. This monitoring documents BLM’s progress toward full implementation of the land use plan decision. There are no specific thresholds or indicators required for this type of monitoring.

Monitoring also is used to determine if the implementation of activities has achieved the desired goals and objectives. This requires knowledge of the objectives established in the RMP as well as indicators that can be measured. Indicators are established by technical specialists in order to address specific questions, and thus avoid collection of unnecessary data. Success is measured against the benchmark of achieving desired future conditions established by the plan.

Monitoring is also used to ascertain whether a cause-and-effect relationship exists among management activities or resources being managed. It confirms whether the predicted results occurred and if assumptions and models used to develop the plan are correct. This type of monitoring is often done by contract with another agency, academic institution, or other entity, and is usually expensive and time consuming since results are not known for many years.

Regulations at 43 CFR 1610.4-9 require that the proposed plan establish intervals and standards, as appropriate, for monitoring and evaluation of the plan, based on the sensitivity of the resource decisions involved. Progress in meeting the plan objectives and adherence to the management framework established by the plan is reviewed periodically. CEQ regulations implementing NEPA state that agencies may provide for monitoring to assure that their decisions are carried out and should do so in important cases (40 CFR 1505.2(c)). To meet these requirements, the BLM will prepare periodic reports on the implementation of the RMP.

Evaluation

Evaluation is a process in which the plan and monitoring data are reviewed to see if management goals and objectives are being met and if management direction is sound.

Land use plan evaluations will be used by the BLM to determine if the decisions in the RMP, supported by the accompanying NEPA analysis, are still valid. Evaluation of the RMP will generally be conducted every five years, unless unexpected actions, new information, or significant changes in other plans, legislation, or litigation triggers an evaluation. Land use plan evaluations determine if decisions are being implemented, whether mitigation measures are satisfactory, whether there are significant changes in the related plans of other entities, whether there is new data of significance to the plan, and if decisions should be changed through amendment or revision.

Based on a Record of Decision and Approved Plan released in the spring of 2009, the following evaluation schedule would be followed for the Butte RMP/EIS:

- January 2014
- January 2019
- January 2024
- January 2029

Evaluations will follow the protocols established by the BLM Land Use Planning Handbook H-1601-1 in effect at the time the evaluation is initiated.

In addition to this monitoring and evaluation schedule, the Approved Plan will identify monitoring processes by goal and program area.

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